grcf

Genetic Resources Core Facility
Research Services Catalog
2017
grcf.jhmi.edu

- **bioprocessing**
- **biorepository**
- **bioshipping**
- **cell line testing**
- **digital PCR**
- **dna isolation & handling**
- **genotyping**
- **methylation**
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- **sequencing**
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GRCF Mission

To provide high quality, cost effective research services and products to investigators throughout the Johns Hopkins Scientific Community.

A Unit of Johns Hopkins Genomics

JOHNS HOPKINS
SCHOOL of MEDICINE

To view the Core Store Catalog flip this document.

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genetic resources core facility

grcf.jhmi.edu

A unit of the Johns Hopkins Genome Center

Dear Researchers,

We would like to take this opportunity to thank you for the privilege of serving you. We value our interactions and look forward to future opportunities to help you, especially at this time when funding is increasingly difficult. The Genetic Resources Core Facility (GRCF) is a university service center providing research expertise, products, and technical services with a focus on genetics and genomics. At the leading edge of technology, we provide sophisticated tools and equipment oftentimes not available in the individual research lab. This past year, the GRCF has joined the Center for Inherited Disease Research (CIDR), the DNA Diagnostic Laboratory (DDL) and Pathology's Molecular Diagnostic Laboratory (MDL) as part of Johns Hopkins Genomics (JHGenomics.jhmi.org). The GRCF High Throughput Sequencing and Genotyping labs have relocated to the East Baltimore campus, occupying the 2nd floor of the 1812 Ashland St. Building along with CIDR and the clinical labs.

In addition to utilizing the many services described in this catalog, we encourage you to explore our web site for new services or changes that are likely to occur over the course of the year. For example, in 2016 we added the 10x Genomics Chromium platform for high throughput RNA or DNA isolation from single cells, the ability to order custom CRISPRs from Sigma through our oligo ordering portal, and several other vendors. We expect 2017 to hold similar exciting developments.

We encourage investigators planning a study to meet with us to discuss your objectives. In many instances we can propose a range of possible approaches and may be able to point you to particular funding opportunities. We are also happy to write letters of support for grant applications that can demonstrate to reviewers that the resources for your study are available at the university.

Finally, thank you for your support of the GRCF. As you may know, we do not receive institutional funding and depend on you, our colleagues, for the support that keeps our services available. We welcome your suggestions for improvements and look forward to being an asset to the Hopkins community for many years to come.

Sincerely,

The Faculty and Staff of the

Genetic Resources Core Facility

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THE GENETIC RESOURCES CORE FACILITY

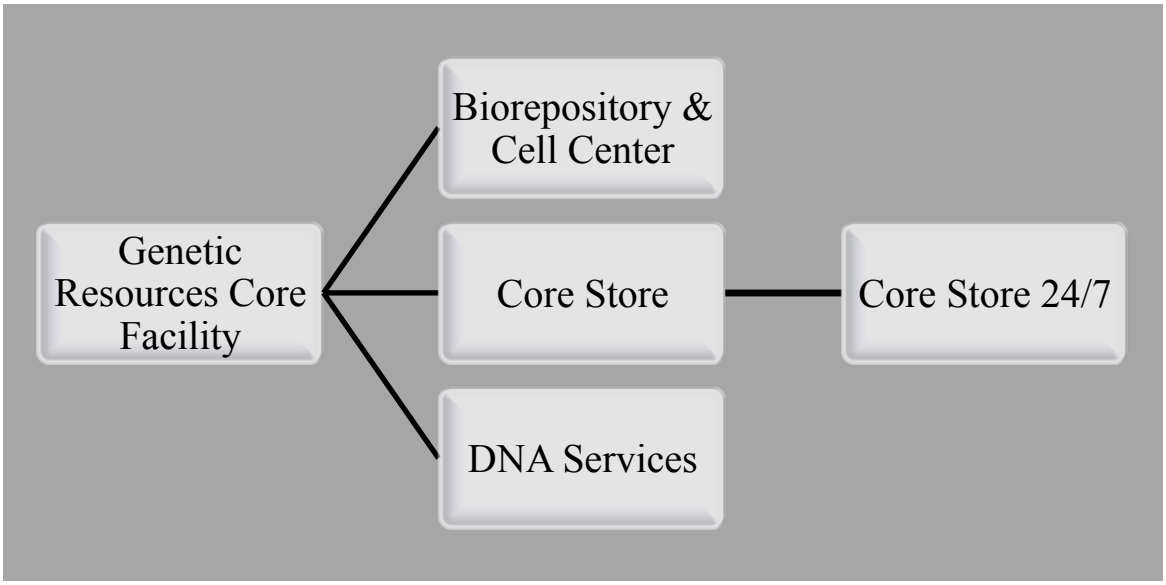
The Genetic Resources Core Facility is a JHU service center including the Core Store, Biorepository & Cell Center and the DNA Services. Collectively, these groups produce a number of products and services to aid researchers performing studies in molecular biology and genetics. It is our mission to provide high quality, cost effective research services and products to investigators throughout the Johns Hopkins Scientific Community.

Biorepository & Cell Center facilitates basic scientific research by providing expertise and service in all mammalian cell culture, single cell genomics, clinical trial support and long-term cryogenic storage of biospecimens. The GRCF Biorepository & Cell Center proudly maintains the international quality and regulatory recognition of CAP (the College of American Pathologist) Accreditation. To help further support leading edge research at Johns Hopkins University, the GRCF has worked to develop a single cell genomics facility. Through the joint effort of the GRCF Biorepository & Cell Center and GRCF DNA Services we are able to offer a one-stop single cell isolation (DNA or RNA), sequencing and analysis service. For more information go to http://grcf.jhmi.edu/biorepository-cell-center/

Core Store provides one-stop shopping for more than 300,000 products from 15 of the leading life science companies. In addition to its product offering the store charges no shipping and handling fees and has free delivery to three campuses East Baltimore, Bayview and Homewood. There is also convenient 24/7 access to several hundred products via the Core Store 24/7 at these locations Blalock 1026, CRB 1 B02A and the Asthma and Allergy Building 1st floor. For more information go to http://grcf.jhmi.edu/core-store/

The DNA Services group works together to provide solutions for all of your DNA and RNA needs. We handle basic needs like DNA isolation, plating and storage, "traditional" core services like Sanger sequencing, PCR support and genotyping, and the more complex needs presented by the constantly changing field of next generation sequencing. For more information on these services please go to http://grcf.jhmi.edu

GRCF Organizational Chart



Research Service Divisions Quick Reference

Core Research Service Division	Location	E-Mail	Phone #
Biorepository & Cell Center	Blalock 1001A	biorepository@jhmi.edu bioprocessing@jhmi.edu bioshipping@jhmi.edu	410-614-5201
Core Store	Blalock 1026	jhucorestore@jhmi.edu	410-614-1647
Core Store 24/7	Blalock 1026, CRB 1 – B02A, Asthma & Allergy 1A.C4	lhillia1@jhmi.edu	410-502-3959
DNA Services	Blalock 1004	customorders@jhmi.edu	410-955-2836
Johns Hopkins Genomics	jhgenomics.jhmi.org	jhgenomics@jhmi.edu	410-614-8100

Notifications:

Core Research Products/Services are for research purposes only.

Pricing of products and services are subject to change. For the most current pricing please visit our website at http://grcf.jhmi.edu

Bioprocessing

The GRCF Biorepository & Cell Center specializes in mammalian cell culture propagation, primary cell establishment, lymphocyte isolation and LCL establishment. Our center has processed more than 25,000 blood specimens and serves approximately 300 investigators both from Johns Hopkins as well as other institutions. The GRCF Cell Center continues to be a leader in the Epstein-Barr virus (EBV) lymphocyte transformation. EBV transformation success rates average 98% from frozen lymphocytes and 99% from fresh lymphocytes. This past year the GRCF Cell Center was excited to launch a new service to the Johns Hopkins community, single cell genomics using Fluidigm's C1 autoprep system. The a single run on the C1 system can isolate and process up to 96 cells to produce pre-amplified cDNA or amplified genomic DNA for downstream analysis, including sequencing on Illumina platforms. The most commonly used application for the C1 single-cell system is currently RNA-seq. The whole process from cell capture to sequence-ready libraries can be done quickly and efficiently to deliver gene expression data from many diverse cell populations. For more information on this or any of the GRCF Cell Center services, please visit our website: https://grcf.jhmi.edu/biorepository-cell-center/.

The GRCF Biorepository & Cell Center is open Monday through Thursday from 7:30 am to 4:30 pm and Friday 7:30 am to 4:00 pm and is located on-site at the Johns Hopkins East Baltimore campus for convenient specimen deposit or retrieval. Blood specimens delivered before 2 pm will be processed the same day. Blood dropped off after hours may be placed in the lock boxes outside the GRCF Biorepository & Cell Center door for processing the next morning. All C1 processing must be arranged with the center at least 24 hours before initiation.

In 2013 the GRCF Biorepository was one of the first to be recognized as a CAP accredited facility, offering superior services in cryopreservation, cryostorage, bioshipping and bioprocessing . We are always looking to improve on services to better fit the needs of the Johns Hopkins community. If there are services you would like to see us offer in the future or any concerns or comments you have for our current services we invite you to contact Melissa Olson, Ph.D. (mvolson@jhu.edu) or bioprocessing@jhmi.edu.

Blood Processing

GRCF Biorepository & Cell Center can help you with your blood processing needs. We offer blood separation, aliquoting and / or cryopreservation of whole blood, lymphocytes, sera and plasma as well as LCL establishment.

Instructions for Blood Collection can be found at: http://grcf.jhmi.edu/biorepository-cell-center/bioprocessing/blood-processing/

Isolation and cryopreservation of viable lymphocytes from whole blood

Service includes sterile lymphocyte isolation by ficoll gradient, cell count, viability determination, cryopreservation of 1 ml aliquot whole blood, cryopreservation of 1-4 aliquots of isolated lymphocytes @ 5 x 10^6 cells, and electronic sample tracking. Cryopreserved lymphocytes are suitable for future transformation. Same-day service is available if whole blood is received by 2pm.

Establishment of cell lines from isolated lymphocytes or whole blood (LCLs)

Service includes B-cell transformation from whole blood isolated blood lymphocytes, culture expansion, and cryopreservation. Specifically includes: lymphocyte isolation by ficoll separation, cell count, viability determination, cryopreservation of whole blood aliquot (1 ml), 1-4 aliquots of lymphocytes @ 5 x 106 cells, and 4 aliquots of (transformed) lymphoblasts @ 10^6 cells and electronic sample tracking. Allow 8-10 weeks for completion

Establishment of cell lines from frozen lymphocytes

Service includes B-cell transformation from previously cryopreserved blood lymphocytes, culture expansion, and cryopreservation. Specifically includes: Thaw of cryopreserved lymphocytes, cell count, viability determination, 1-4 aliquots of freshly cryopreserved lymphocytes @ 5 x 10^6 cells, and 4 aliquots of (transformed) lymphoblasts @ 5 x 10^6 cells and electronic sample tracking. Allow 8-10 weeks for completion.

Isolation, aliquoting, and cryopreservation of sera and plasma

Service includes isolation and cryopreservation of sera and plasma aliquots (0.5-1ml) with electronic sample tracking. Cryopreserved sera and plasma proteins are intact for future analysis. Same-day service is available if whole blood is received by 2pm.

Aliquoting and cryopreservation of whole blood

Service includes the aliquoting of fresh whole blood in 0.5-1ml volumes and cryopreserving.

Cell Culture

The GRCF Biorepository & Cell Center is able to help you with your cell culture needs. We are a mycoplasma-free facility offering primary fibroblast isolation and establishment, cell culture expansion, cryopreservation and cell line distribution.

Cell Expansion / Preparation of Cell Line Stocks

Cultured cells from your lab can be tested for mycoplasma, expanded, aliquoted, and cryopreserved in freezing media (5×10^6/vial).

Preparation of cells for DNA or RNA extraction

Eukaryotic cells from the your lab or from ATCC can be expanded and pelleted for nucleic acid isolation (1×10^8 cells). DNA or RNA extraction is available through the GRCF's DNA Services, http://grcf.jhmi.edu/dna-services/

Establishment of fibroblast cultures from tissue biopsies

Service includes fibroblast isolation and establishment in culture, cryopreservation of four (4) aliquots (5×10^6 cells per vial) and electronic sample tracking. Submit 5 X 2mm biopsy and allow 8-10 weeks for completion.

Establishment of cell lines from fresh or frozen lymphocytes

Service includes B-cell transformation from previously cryopreserved blood lymphocytes or freshly isolated blood lymphocytes, culture expansion, and cryopreservation. Specifically includes: cell count, viability determination, 1-4 aliquots of freshly cryopreserved lymphocytes @ 5×10^6 cells, and 4 aliquots of (transformed) lymphoblasts @ 5×10^6 cells and electronic sample tracking. Allow 8-10 weeks for completion.

If you are looking for DNA Isolation, see p. 15

If you are looking for RNA isolation, see p. 28

For Cell Line Authentication, see p. 10

For Mycoplasma Testing see p. 11

Biorepository

The GRCF Biorepository at Johns Hopkins is dedicated to meeting all of your short and long-term cryostorage requirements. Located onsite at the Johns Hopkins East Baltimore campus, the GRCF Biorepository offers a range of frozen and ambient storage options for DNA, RNA, whole blood, sera, plasma, blood spot cards and viable mammalian cells. In 2013 the GRCF Biorepository was recognized as a CAP accredited facility, offering superior services in cryopreservation, cryostorage, bioshipping and bioprocessing. Further, the Biorepository & Cell Center is an active member and strictly adheres to guidelines set forth by ISBER best biorepository practices.

The GRCF Biorepository is open Monday through Thursday from 7:30 am to 4:30 pm and Friday 7:30 am to 4:00 pm for convenient deposit and retrieval of specimens. A four-hour advance notice is requested for timely sample retrieval. For more information on these services please visit our website: https://grcf.jhmi.edu/biorepository-cell-center or email us at biorepository@jhmi.edu.

Biorepository Services

The GRCF Cell Center & Biorepository offers the following cryogenic storage services:

- Secure cryovial storage in vapor phase liquid nitrogen (LN2) - 170 degrees C
- Secure cryovial storage in subzero temperatures -80 degrees C
- Secure cryovial storage in subzero temperatures -20 degrees C
- Secure cryo-box storage in vapor phase liquid nitrogen (LN2) – 170 degrees C
- Secure cryo-box stoage in subzero temperatures -80 degrees C
- Secure cryo-box stoage in subzero temperatures -20 degrees C
- Inventory Monitoring and specimen tracking
- On-site cryogenic storage with same day specimen retrieval
- Upon request, specimen disposal with certificate of discard

For questions please contact us at: biorepository@jhmi.edu

Safeguards

The GRCF Biorepository & Cell Center takes the following measures to ensure the safety of your specimens:

- Replicate aliquots are stored in separate freezers.
- Specimen storage temperatures are continually monitored with 24 hour dedicated on-call staff responders.
- Storage equipment is routinely validated for temperature consistency, quality monitoring and cold supply.
- Every label is equipped with both barcoded and human readable information. Label integrity is validated under extreme conditions.
- Disaster contingency plans are in place and routinely tested.
- Barcoded specimens and specimen tracking are provided using a relational database.
- Every box is equipped with an indicator that serves for positional orientation and frozen status.
- Frozen indicators located among specimens routinely validate integrity of the specimen storage box itself.
- All specimens are stored in stainless steel boxes and identified with bar-coded labels made of a material that is impervious to mechanical trauma and liquid nitrogen.
- All specimen information is maintained in a searchable database that is backed up twice daily.

Bioshipping

The GRCF Biorepository processes more than 500 domestic and international shipments per year for its customers and their collaborators. The service includes shipping arrangements, documentation, dry ice, shipping boxes, contact with courier for pick-up and telephone or e-mail follow-up with recipient upon shipping.

All GRCF Biorepository personnel have been trained in Department of Transportation (DOT) hazardous materials shipping regulations. Investigators are responsible for preparing material transfer agreements (MTA) through the Johns Hopkins Office of Licensing and Technology. The majority of our shipments are sent via FedEx Priority cryopreserved on dry ice. For shipping questions, please email us at http://bioshipping@jhmi.edu.

Pricing

Package Description	Package Destination	Package Dimension (inches)	Dry Ice Weight (pounds)	Total Cost*
Small	Domestic (USA), Canada, Mexico	11x9x7	6	$35.00
Medium	Europe	14x14x14	20	$75.00
Large	Asia, Africa, South America, Australia	24x16x16	60	$160.00
Cryoport	Upon Request	12x12x24	20(LN2)	$800.00

**Cost based on the sale of dry ice at $2.50/lbs., insulated cooler and cardboard box and does not include courier charges.*

The Bioshipping courier of choice is FedEx. If you prefer a different courier, please let us know and we will be happy to work with you to get your biospecimens safely to their destination.

Dry Ice

Is available at Blalock 1017, Monday – Thursday, 7:30 am – 4:30 pm and Fridays 7:30 am - 4:00 pm

- 1/2″ diameter dry ice pellets
- Used primarily for shipping and transport of temperature-sensitive cells and reagents
- Sold in 1-pound quantities or more
- Bring your own container

Dry ice purchases are made using CrossLab. Please make sure you are authorized to purchase items with your budget number in CrossLab prior to coming to make your purchase. If you need help setting up your CrossLab account, detailed instructions can be found on the Core-in-a-Box website:
http://www.hopkinsmedicine.org/research/resources/synergy/core-in-a-box/finder/ilabs-support.html

Cell Line Testing

Cell Line Authentication

In light of the NIH's recommendation, https://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-017.htm, that all cell lines be authenticated before publication, the GRCF's DNA Services offers a short tandem repeat (STR) profiling service to customers who wish to confirm the identity of a line by comparison to a known profile or to establish an identity profile for a cell line generated locally.

General recommendations are to authenticate when a new line is established or acquired to determine an identity for the cell line. Cells should be authenticated again before freezing, once every two months that the culture is actively growing, if the performance of the line is not consistent or results are unexpected, and before publication. If using more than one cell line in the lab, all lines should be initially tested to rule out cross contamination.

The GRCF is currently offering two levels of cell line authentication service. Standard Service or Standard Service plus Profile Search. Standard Service includes a signed cell line authentication report for each line submitted that is suitable for proof of cell line authentication which may be required by journals and grant funding bodies, an STR profile table with allele designations for comparison to reference databases, an electropherogram profile, and a table with the raw data for the alleles (size in base pairs, peak height, peak area). Standard Service is suitable for scientists who prefer to do their own profile comparison analysis. The results can be used to check for cross contamination, mix-ups and percent match between lines or to establish the identity of a new cell line. Standard Service plus Profile Search includes the above, plus cross referencing against repositories ATCC and DSMZ databases to check the authenticity of your cell line.

This analysis is offered using Promega's GenePrint 10 System, PowerPlex 16HS, and PowerPlex 18D kits. The kits are only suitable for cell lines of HUMAN origin. For a list of STR markers included in the kits please see http://grcf.jhmi.edu/biorepository-cell-center/bioprocessing/cell-line-authentication/.

Ordering

Please place your order through our secure online ordering system at http://jhu.genesifter.net.

Delivery of Samples

JH Customers: Drop samples off in Blalock 1004 with the GeneSifter order number, Monday – Friday from 8:00 AM – 4:30 PM.

External Customers: Send the samples with the GeneSifter order number to:

Laura Kasch
Fragment Analysis Facility
Johns Hopkins University
2760 Lighthouse Point East, Suite 201
Baltimore, MD 21224
Phone (443) 287-7948

Email the courier tracking number and GeneSifter order number to FAF@jhmi.edu. Samples must be received by 11AM Tuesday for inclusion in our weekly processing schedule (see turnaround time).

Sample preparation

The GRCF accepts purified DNA (please provide a minimum of 100ng of DNA), cell pellets (dried or frozen, between 100,000 and 5 million, preferred) or frozen cell aliquots (Cryopreservation tube) for analysis. A cell pellet is required for combined authentication and mycoplasma testing. A DNA isolation charge applies when submitting cell pellets or frozen cell aliquots. We can also extract DNA from other sources – please inquire.

What you will receive

Standard Service: You will receive a signed cell line authentication report that includes a STR profile table of your cell line with data suitable for comparison to reference databases, an electropherogram (graphic profile), and a table with the raw data for the alleles (size in base pairs, peak height, peak area). The report is suitable for proof of cell line authentication that may be required by journals and grant funding bodies.

Standard Service Plus Profile Search: You will receive a signed cell line authentication report that includes a STR profile table of your cell line with data suitable for comparison to reference databases, an electropherogram (graphic profile), and a table with the raw data for the alleles (size in base pairs, peak height, peak area) plus a database search of repositories ATCC, DSMZ, and JCRB for a known cell line reference profile for comparison.

Turnaround time

Samples submitted for STR profiling are run once a week on Tuesday, with results emailed usually on Monday of the following week. Johns Hopkins customers should drop off samples in Blalock 1004 by 4PM on Monday or hand deliver to the FAF laboratory in Canton by 11AM Tuesday for inclusion in that week's processing schedule. External customers should ship samples to the lab to be received by 11AM Tuesday for inclusion in that week's processing schedule. Samples received after 11AM Tuesday through Friday of any given week will be held and processed the following week.

Pricing

DNA isolation (required for submission of cell pellets): $25 per sample

Standard Service

- GenePrint 10: $95/sample
- PowerPlex 16HS: $135/sample
- PowerPlex 18D: $150/sample

Standard Service Plus Profile Search

- GenePrint 10: $137/sample
- PowerPlex 16HS: $177/sample
- PowerPlex 18D: $192/sample

Mycoplasma and Cell Line Authentication (STR profiling) from the same cell pellet

- GenePrint 10: $140/sample (Standard Service)
- GenePrint 10: $181/sample (Standard Service plus Profile Search)
- PowerPlex 16HS: $179/sample (Standard Service)
- PowerPlex 16HS: $221/sample (Standard Service plus Profile Search)
- PowerPlex 18D: $194/sample (Standard Service)
- PowerPlex 18D: $236/sample (Standard Service plus Profile Search)

Payment

- John Hopkins investigators: IO number or credit card (VISA or MasterCard)
- External U.S. customers: P.O., check or credit card (VISA or MasterCard)
- External foreign customers: P.O., check or credit card (VISA or MasterCard)

*Listed pricing is for Johns Hopkins investigators; all other customers will have a 16% administrative fee added. International customers using a credit card will have an additional $25 processing fee added in addition to the administrative fee.

Mycoplasma Detection

Tissue cell cultures can become contaminated by mycoplasma species without you knowing, which can be a serious problem. Mycoplasma can cause alterations in cell growth and metabolism, or induce morphological changes or

chromosomal abnormalities. Potential sources of contamination are laboratory personnel, contaminated products used for cell culture, or exposure to contaminated cultures.

The FAF offers mycoplasma testing using a PCR based MycoDtect kit from Greiner Bio-One. A fluorescent primer pair is used to amplify the conserved 16S – 23S intergenic spacer region of ribosomal RNA. Amplified fragments are hybridized to a MycoDtect DNA-array for detection of all mycoplasma species using a universal probe while simultaneously identifying nine of the most common mycoplasma species with species-specific probes. Species identification can help to identify and treat the source of contamination.

Screening for mycoplasma contamination is recommended on a regular basis, and before cell banking and cryopreservation.

Ordering

Please place your order through our secure online ordering system at http://jhu.genesifter.net.

Delivery of samples

JH Customers: Drop samples off in Blalock 1004 with the GeneSifter order number, Monday – Friday from 8:00 AM – 4:00 PM.

External Customers: Send the samples with the GeneSifter order number to:

Laura Kasch
Fragment Analysis Facility
Johns Hopkins University
2760 Lighthouse Point East, Suite 201
Baltimore, MD 21224
Phone (443) 287-7948

Samples should be sent for delivery Monday through Friday only.

Sample Preparation

Samples may be submitted from growing culture or as frozen ampoules. We accept pelleted cells, supernatant or frozen stocks. The FAF will accept BSL-1 and BSL-2 samples for testing. If submitting samples for mycoplasma testing and cell line authentication follow the below growing culture cell pellet instructions.

Instructions for growing cultures: Passage cells in antibiotic-free media twice. Do not change the medium or dilute with fresh medium during the last 72 hours before testing. Cells should be 50-80% confluent.

Note: Samples grown in antibiotics or given fresh medium prior to testing may have artificially low mycoplasma levels if present or may give a false negative result.

Cell Pellets: Remove all but approximately 5 to 7 ml of medium in a T25 flask or 8 to 10 ml in a T75 flask. Use a cell scraper to dissociated cells from the substrate. Transfer the cell suspension to a 15 ml conical tube for submission. Centrifuge to pellet cells then remove supernatant.

Supernatant: Remove 5 ml – 10 ml supernatant from flask to a 15ml conical tube.

Frozen stock: Ampoule may be delivered at room temperature.

Pricing

- Mycoplasma testing only: $60/sample

Mycoplasma AND cell line authentication (STR profiling) from the same cell pellet:

- GenePrint 10: $140/sample (Standard Service)
- GenePrint 10: $1181/sample (Standard Service plus Profile Search)
- PowerPlex 16 HS: $179/sample (Standard Service)
- PowerPlex 16 HS: $221/sample (Standard Service plus Profile Search)

- PowerPlex 18D: $194/sample (Standard Service)
- PowerPlex 18D: $236/sample (Standard Service plus Profile Search)

Payment

- John Hopkins investigators: IO number or credit card (VISA or MasterCard)
- External U.S. customers: P.O., check or credit card (VISA or MasterCard)
- External foreign customers: P.O., check or credit card (VISA or MasterCard)

*Listed pricing is for Johns Hopkins investigators; all other customers will have a 16% administrative fee added. International customers using a credit card will have an additional $25 processing fee added in addition to the administrative fee.

Please see our website, http://grcf.jhmi.edu/grcf-services/cell-line-testing/, for additional information about the testing procedure and sensitivity.

Digital PCR

Digital PCR is a new approach to nucleic acid detection and quantification. It offers a different method for absolute quantification and rare allele detection relative to conventional real-time quantitative PCR. Digital PCR works by partitioning a sample into many individual real-time PCR reactions; some portion of these reactions contain the target molecule (positive) while others do not (negative). Following PCR, the fraction of negative reactions is used to generate an absolute count of the number of target molecules in the sample, without reference to standards or endogenous controls.

At the GRCF, we offer digital PCR using ThermoFisher's QuantStudio 3D platform. This technology partitions samples on a chip instead of in droplets, but results in the same type of data.

Digital PCR is an exciting new technology, but it requires careful thought and planning to answer particular questions. Because of this, consultation is required prior to starting an experiment. Please email customorders@jhmi.edu or call 410-955-2836 to make an appointment.

Pricing

$26/chip*

*ThermoFisher recommends using two chips on each sample to help average aliquoting variation

DNA Isolation & Handling

The GRCF offers a variety of services for researchers working with DNA. These services include:

- Bisulfite Conversion
- DNA Isolation
- Sample Plating
- Whole Genome Amplification (WGA)

For more information, see the individual topic or contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu.

Bisulfite Conversion

Bisulfite conversion of isolated DNA is offered using Zymo Research Corporation EZ DNA Methylation Kit or Qiagen EpiTect Bisulfite Kits. Converted DNA is suitable for PCR, endonuclease digestion, sequencing, microarrays, and Illumina Infinium and Golden Gate Methylation Assays.

Illumina Methylation Studies

Illumina recommends the following kits for bisulfite conversion. They do not recommend using any other kits.

- EZ DNA Methylation Kit for 50 DNA reactions (Zymo Research, catalog # D5001)
- EZ DNA Methylation Kit for 200 DNA reactions (Zymo Research, catalog # D5002)
- EZ-96 DNA Methylation Kit for 2×96 DNA conversion reactions (deep-well Zymo-Spin I-96 Filter Plate) (Zymo Research, catalog # D5004)

Pyromark Q48 Methylation Studies

Either type of bisulfite conversion kit may be used for the Pyromark system, though Qiagen guarantees their assays if their conversion kit is used.

Pricing and Ordering

EpiTect Bisulfite conversion: $11/sample. EZ DNA Methylation conversion pricing is sample number dependent. Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu for pricing and ordering instructions.

DNA Isolation

The GRCF offers genomic DNA isolation from whole blood, buffy coat, packed cells, cultured cells, blood spot cards, FFPE samples, buccal swabs/brushes, mouthwash, and Oragene saliva collection kits.

DNA is suitable for archiving, PCR, Southern blotting, library construction and other applications requiring high molecular weight DNA.

DNA is supplied with A260 and A260/A280 values determined by Nanodrop analysis. Sample concentration can be adjusted per customer specifications. DNA aliquoting is also available.

Qualitative analysis using a Fragment Analyzer (Advanced Analytical Technologies, Inc.) is available. $160 for up to 10 samples per run. Discounts given for multiple sample sets of 10.

Storage of blood on Whatman FTA Classic Cards for archiving is available.

Pricing

Prices range from $25 to $47 per sample. Volume pricing is available for large study projects or batched samples.

Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu, for pricing.

Ordering

Please place your order through our secure online ordering system at http://jhu.genesifter.net.

Delivery of samples

JH Customers: Drop samples off in Blalock 1004 with the GeneSifter order number, Monday – Friday from 9:00 AM – 4:00 PM.

External Customers: Send the samples with the GeneSifter order number to:

Laura Kasch
Fragment Analysis Facility
Johns Hopkins University
2760 Lighthouse Point East, Suite 201
Baltimore, MD 21224
Phone (443) 287-7948

Samples should be sent for delivery Monday through Friday only.

Sample Plating

Sample plating includes organization of samples, diluting DNA to a specified concentration, and aliquoting samples into 96-well plates. Samples must be supplied with an optical density (OD) measurement and an electronic inventory of samples. Pricing is per 96-well plate.

If samples lack an OD we can determine the concentration of your samples by Nanodrop or pico green analysis for an additional fee.

Pricing and Ordering

$250 per 96-well plate, GRCF supplied Matrix plate $65 additional

Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu for ordering instructions.

Whole Genome Amplification

Whole genome amplification (WGA) of extracted DNA is carried out using a REPLI-g kit (Qiagen). The kit uses Multiple Displacement Amplification technology to produce highly uniform amplification across the genome. The genome is isothermally amplified utilizing a DNA polymerase with $3' - 5$ exonuclease proofreading activity capable of replicating up to 100 kb without disassociating from the DNA template. Typical yields from the REPLI-g kit are 40 ug DNA with a product range of 2 to 100 kb and an average of greater than10 kb. Poor quality genomic DNA may result in synthesis failure, reduced call rates in downstream applications, or loss of loci or alleles in the amplification product.

WGA products are supplied with PicoGreen quantification values.

Pricing

Pricing is sample number dependent. Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu for pricing.

Ordering

Please place your order through our secure online ordering system at http://jhu.genesifter.net.

Genotyping

The Genetics Resources Core Facility offers several different methods of genotyping. We feature high throughput genotyping on the Illumina platform, medium throughput genotyping on the Life Technologies Open Array platform with TaqMan® assays, and lower throughput genotyping via individual TaqMan®, Qiagen Pyrosequencing assays or STR/VNTR analysis. Most platforms offer specialized content for humans and mice, but we can work with you to genotype other organisms as well. The GRCF also offers STR profiling for Cell Line Authentication.

Access to our Illumina technology is available fee-for-service through the GRCF or for free with an application through the CIDR mechanism. To apply to CIDR, you must have grant support through one of the thirteen member NIH institutes. CIDR also requires a written application, the details of which are available on the web site: http://www.cidr.jhmi.edu.

Custom Genotyping

Individual Variants

For customers interested in individual variants, the GRCF offers custom genotyping to analyze short tandem repeats (STR), variable number tandem repeats (VNTR) and single nucleotide polymorphisms (SNP). SNP detection can be done using various methods:

- TaqMan analysis with custom or predesigned kits (Life Technologies) on an Applied Biosystems 7900HT Real Time PCR System
- Sanger sequencing of PCR products on an Applied Biosystems 3730XL DNA Analyzer
- Pyrosequencing of biotinlyated PCR products on the Qiagen Pyromark Q24, using custom or predesigned kits

In addition to the kits offered by Life Technologies and Qiagen, we have developed assays for some common polymorphisms.

Gene	Gene Symbol	Description
Alpha2C adrenergic receptor	ADRA2C	12bp in frame deletion Del322-325
Angiotensin I-converting enzyme	ACE	insertion/deletion polymorphism
Apolipoprotein E	APOE	112T>C and 158C>T (E2, E3, E4 alleles)
Asporin	ASPN	aspartic acid (D) repeat GAT
Dopamine Receptor D4	DRD4	48bp VNTR
Dopamine Transporter	DAT/SLC6A3	40bp VNTR in 3'-untranslated region
Monoamine oxidase A gene	MAOA	30bp VNTR in promoter
Serotonin transporter	5'-HTTLPR	insertion/deletion (Long/Short allele)
Serotonin transporter	5'-HTTLPR	rs#25531, A>G SNP

Pricing

Pricing is sample number and project specific for individual variant projects. Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu for consultation and a quote.

Medium Throughput Custom Genotyping

Taqman OpenArray Chemistry from Life Technologies

The OpenArray technology spots off the shelf or custom Taqman assays into 33 nl through-holes on arrays, which allows many assays to be tested on up to 144 samples at once. Chips can assay 16, 32, 64, 128 or 256 SNPs at once.

Pricing

A minimum of 10 chips must be ordered, but for 16 or 32 SNPs, these arrays are often very cost effective, even if they won't all be used. Pricing in table is for the minimum number of chips and assumes that all chips will be used. Actual prices will be adjusted based on the number of chips used.

Chip Format	Number of Samples/Chip	Minimum # of Chips (Samples)	Price	Total cost
16 SNPs	144	10 (1440)	Chips: $5,728 Other costs: $2100	$7,828
32 SNPs	96	10 (960)	Chips: $5,728 Other Costs: $2,000	$7,728
64 SNPs	48	20 (960)	Chips: $11,456 Other costs: $2,700	$14,156
128 SNPs	24	40 (960)	Chips: $22,912 Other costs $5,400	$28,312
192 SNPs	16	60 (960)	Chips: $34,368 Other costs: $8,100	$42,468
256 SNPs	12	80 (960)	Chips: $45,824 Other costs: $10,800	$56,624

High Throughput Custom Genotyping

iSelect Infinium BeadChips: The Infinium technology is the same technology as used for the Genome Wide Association Chips. These custom panels can be created using between 3,000 and 1,000,000 SNPs, for any species with sequence information. The minimum number of samples for this to be cost-effective is 1,100. Custom content can also be added to any of Illumina's GWAS chips, often at a lower cost than a completely custom chip.

Pricing

Pricing on this product is based on increments of both SNP numbers and sample numbers. Please contact Roxann Ashworth [rashwor2@jhmi.edu; 410-614-0702] for detailed information on pricing and SNP selection.

Affymetrix Custom Arrays: These arrays can be ordered in two sizes: less than 50K SNPs and less than 750K. There is a minimum order of 570 samples.

Self Service Genotyping

If you wish to do your own Taqman genotyping, but don't have the equipment to read the results, you may rent time on our self-service equipment: $20/hour to thermocycle on the machine, $10 for an endpoint read.

Genome Wide Association

Cytogenetics

Human CytoSNP Chip: The HumanCytoSNP-12 BeadChip is designed to scan the whole genome in an efficient, high-throughput analysis of genetic and structural variations that are most relevant to human disease. Resolution is better than with FISH or CGH. The chip can be used to detect duplications, deletions, amplifications, copy-neutral LOH and mosaicism. The panel contains 200,000 "best of the best" SNPs with high tagging power, and includes dense coverage around the 250 genomic regions commonly screened in cytogenetics laboratories.

Pricing*

Number of Samples	Standard Content
49 or 94	$225
140-558	$215
>558	Please inquire

Human Core Product Line

Human Core BeadChip: The HumanCore BeadChip contains about 240,000 highly informative genome-wide tag SNPs found across diverse world populations and an additional 20,000 high-value markers. It is ideal for obtaining baseline sample datasets for downstream applications: common variant, mtDNA, ancestry, sex confirmation, loss of variant, indel, linkage and CNV detection. It can be ordered with Exome content or customized with up to 200,000 SNPs for an additional charge.

Pricing*

Number of Samples	Standard content	Standard + Exome Content
93	$125/sample	$145/sample
94 - 2000	$110/sample	$132/sample
>2000	Please inquire	Please inquire

Human Multi-Ethnic Global Array (MEGA) Product Line

Human Multi-Ethnic Global Array: Consortium partners developed content for this multi-ethnic global genotyping array using tagging strategies with the power to perform more effective association studies in diverse populations. The novel algorithm selects population-specific and transethnic tag SNPs that maximize imputation accuracy, as imputation has become a standard practice in the interpretation of genotyping data and allows for more accurate statistical inference of genotypes not directly genotyped.

Pricing*

Number of Samples	Standard Content
93	$210/sample
94 - 2000	$200/sample
>2001	Please inquire

Human Multi-Ethnic EUR/EAS/SAS BeadChip: The Infinium Multi-Ethnic EUR/EAS/SAS chip provides a multi-purpose, multi-ethnic genotyping array focused on European, East Asian, and South Asian populations.

Human Multi-Ethnic AMR/AFR BeadChip: The Infinium Multi-Ethnic AMR/AFR chip provides a multi-purpose, multi-ethnic genotyping array focused on Hispanic and African American populations.

With > 1.4 million expertly selected markers, either of these arrays enable identification of genetic associations with common and rare traits, providing insight to epidemiologists, health care researchers, population geneticists, and genomic researchers.

Pricing for either array*

Number of Samples	Standard Content
93	$205/sample
94 - 2000	$195/sample
>2001	Please inquire

Human Omni Product Line

HumanOmniExpress BeadChip: The HumanOmniExpress genotypes 700,000+ SNPs, gleaned from all three HapMap phases. It is primarily targeted for Caucasian and Asian populations, with genomic coverage of 0.91 at r2 > 0.8 in these populations. It also supports CNV applications, with a 4.0 kb mean distance between CNVs across the genome. Illumina now has developed a method for running this chip with DNA restored from FFPE and other highly degraded samples. This service is available through our facility, for an additional charge. The content of the Exome chip or up to 200,000 SNPs may be added to this chip for an additional charge. The OmniExpress + Exome chip may be customized with up to 30,000 additional SNPs.

Pricing*

Number of Samples	Standard Content	Standard Content + Exome	Standard Content + FFPE restore
93	$235/sample	$255/sample	$335/sample
94 - 2000	$200/sample	$220/sample	$300/sample
>2001	Please inquire	Please inquire	Please inquire

HumanOmni2.5: This high-density chip has 2.45 million SNPs. It offers a comprehensive set of both common and rare SNP content from the 1000 genome project. It is designed to analyze diverse world populations. Mean SNP spacing is 1.18 kb, and 1.2 million of the SNPs are within 10 Kb of a RefSeq gene. Almost 50,000 of the SNPs are nsSNPs.

Pricing*

Number of Samples	Standard Content	Standard Content + Exome
47 or 93	$420/sample	$440/sample
94 - 2000	$370/sample	$390/sample
>2000	Please inquire	Please inquire

HumanOmni5: The Omni5 chip is designed to supplement data created from the Omni2.5 and bring it to the equivalent of the Omni5 chip. Leverages tagSNPs selected from the HapMap and 1000 Genomes Projects, targeting genetic variation down to 1% MAF.

Pricing*

Number of Samples	Standard Content	Standard Content + Exome
47 or 93	$580/sample	$600/sample
94 - 2000	$520/sample	$540/sample
>2000	Please inquire	Please inquire

***Pricing Details**

For GWAS projects with more than 94 samples, our full service pricing includes:

- The Illumina QC panel (15,000 SNPs used to barcode the sample and verify the GWAS dataset released matches the sample performance).
- Identification of problems and replacement of problem samples before running on the GWAS arrays.
- Two HapMap controls per 96 well plate and 1 blind duplicate every other plate.
- Repetition of any sample that has less than a 96.5% call rate for an Illumina array. We attempt the GWAS assay only twice.
- Lower levels of service available at reduced costs on some products. Please see web-site for details (http://grcf.jhmi.edu/dna-services/genotyping/genome-wide-association/).

Non-Human Genotyping

Illumina has products available for several different species, including bovine, canine, ovine, porcine and maize. Additionally, custom panels maybe created for genotyping species with DNA on any of our genotyping platforms.

Mouse GigaMUGA Linkage Array

This product is the latest in consortium developed mouse linkage arrays.

Pricing

Number of Samples	Standard content
93 – 2000	$185/sample
>2001	Please inquire

Targeted Content Products

Fingerprinting by STR Analysis/Cell Line Authentication

The GRCF offers a short tandem repeat (STR) profiling service to customers who wish to confirm the identity of a line by comparison to a known profile or to establish an identity profile for a new cell line generated locally. For further information see Cell Line Authentication or our website at http://grcf.jhmi.edu/grcf-services/cell-line-testing/.

Fingerprinting by Taqman Barcode Panel

This OpenArray panel consists of 64 markers, including 3 Y-chromosome markers that allow for unique identification of individuals, though it may not be sensitive enough to distinguish siblings from each other. Markers were selected to have high Minor Allele Frequency (MAF) in multiple ethnic groups, so this chip cannot be used for distinguishing between populations. It is useful as an internal control for GWAS studies and next-gen sequencing projects. Each chip runs 48 samples.

Pricing

- 1 chip: $1,038
- 2 chips: $1696
- 3 chips: $2,354
- 4 chips: $3,012

Discounts available for larger projects. Please email Roxann Ashworth (rashwor2@jhmi.edu) for pricing.

Fingerprinting or Human Linkage by Illumina QC Array

The Illumina QC array contains 15,949 markers which are useful for biobanking, fingerprinting, ethnic ancestry determination and QC. The array contains all of the SNPs which were on the former human linkage array, so it can also be used for linkage studies. It also included ADME content.

Pricing

Number of Samples	Standard content
No minimum or maximum	$45/sample

Human Exome Chip

This Illumina Infinium chemistry array was developed by a consortium with the goal of enabling an intermediate experiment between current genotyping arrays, which focus on relatively common variants, and exome sequencing of very large numbers of samples, which will enable examination of coding variants, down to singletons. The array aims to include coding variants seen several times in existing sequence datasets. Information from ~12,000 sequenced genomes and exomes was assembled and catalogued for each variant that potentially affects protein structure, the total number of times it was seen and the total number of datasets that included the variant. The chip assays around 250,000 SNPs.

Pricing

Number of Samples	Standard content
93	$80/sample
93 – 2000	$76/sample
>2001	Please inquire

Specialized Consortium Arrays

We are happy to work with you to genotype the consortium or commercial version of any of Illumina's specialized arrays. These offerings are constantly changing and pricing and rules for access vary by array. Please contact us if you are interested in running any of the current offerings, which include (but are not limited to): the Onco-Array, the Psych Array, and the NeuroX Array.

Pricing

Please contact Roxann Ashworth (410-614-0702; rashwor2@jhmi.edu) for pricing. Please include the name of the array of interest and approximate sample numbers in your email, as pricing is dependent on the number of samples. Minimum sample number is at least 92, but some arrays may have higher minimums.

Taqman OpenArray PGx Panel

This panel is derived from the PharmaADME Core Marker Set and assays 158 different polymorphisms in genes encoding drug metabolism enzymes and their associated transport proteins. Each chip tests 16 samples. Price includes data cleaning and returned SNP calls.

Pricing

- 1 chip: $1,066
- 2 chips: $1,752
- 3 chips: $2,438
- 4 chips: $3,123
- Discounts available for projects of 11 or more chips. Please email Roxann Ashworth (rashwor2@jhmi.edu) for pricing.

Methylation

Genome Wide Analysis

EPIC (850K) Infinium Methylation BeadChip: Illumina's new 850K Methylation chip is not reliant on Me-DIP (Methylated DNA immunoprecipitation). In addition to 90% of the content of the former 450K chip, this chip covers CpG sites outside of CpG islands, non-CpG methylated sites, tumor/normal differentially methylated sites, FANTOM5 enhancers, ENCODE open chromatin & enhancers, DNase hypersensitive sites, and miRNA promoter regions. A list of all CpG sites is available for download. Bisulfite conversion is included in pricing for projects with more than one full plate. Fully methylated and non-methylated controls are assayed at no additional charge.

Pricing

Number of Samples	Standard Content	Standard Content + FFPE restore
46 or multiples of 46	$430/sample	$530/sample

Targeted Analysis

Analysis via Pyrosequencing

Specific regions of methylation can be assayed via sequencing on the Pyromark Q48 system from Qiagen. This is not high throughput/next generation sequencing. Bisulfite converted DNA is PCR amplified with a biotinylated primer pair. The non-biotinylated strand is sequenced in the Pyromark system. Custom regions can be amplified, or one of the 30,000 human and rodent predesigned kits can be ordered from Qiagen. Primers ordered through us receive a slight discount and free shipping. Primer design software is available for use by customers

For more information, contact Roxann Ashworth [rashwor2@jhmi.edu; 410-614-0702]

Pricing

Number of Samples	Advanced Reactions
<47 samples	$10.25/sample
Samples in multiples of 47	$10.00/sample

PCR support and bisulfite conversion is available for Pyrosequencing projects
Service includes bisulfite conversion of DNA samples, PCR of samples, amplification confirmation by agarose gel electrophoresis and submission for sequencing. Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu] for ordering instructions.

Pricing:

Pricing is sample number dependent. Please inquire with Laura Kasch [lkasch@jhmi.edu; 410-614-3830]

Bisulfite Conversion

Bisulfite conversion services are available. Please see p. 15 for details

RNA Services

cDNA Synthesis & RT-PCR

cDNA Synthesis for MicroRNA Profiling and Custom Gene Expression Taqman Arrays

The GRCF will prepare cDNA from customer supplied total RNA according to Life Technologies quick reference guide for Taqman MicroRNA profiling or by recommended procedures for the Gene Expression Array analysis for use on the QuantStudio 12K Flex Real-Time PCR System. The GRCF also has RNA isolation services available if you require start to finish processing.

cDNA synthesis using Superscript VILO (Life Technologies, catalog number 11754)

cDNA synthesis using a Superscript VILO kit is also available. We offer conversion of up to 2500 ng of RNA in one reaction. Greater than 2500 ng can be converted for an additional charge. The amount of RNA converted in one reaction is dependent on the concentration of the RNA.

RNA Requirements

- RNA should be free of PCR inhibitors
- Has a A260/230 ratio between 2.0 and 2.4
- Has a A260/280 ratio between 1.8 and 2.1
- Has a RNA Integrity Number (RIN) between 6.5 and 10

The recommended amount of total RNA for preparing cDNA for microRNA Profiling is 100ng.

The recommended amount of total RNA for preparing cDNA for Gene Expression Taqman Arrays is 10µl at 200ng/µl (2µg).

Qualitative analysis of your RNA samples is available by Advanced Analytical Fragment Analyzer CE analysis. The system determines a RQN (RNA Quality Number) of total RNA on a scale from 1 to 10 that correlates to current industry practices (RIN).

Pricing

$25 - $27 per sample for cDNA synthesis

Qualitative analysis of RNA using a Fragment Analyzer (Advanced Analytical Technologies, Inc.) is available. $160 for up to 10 samples per run. Discounts given for multiple sample sets of 10.

Ordering

Please contact Laura Kasch [410-614-3830 or lkasch@jhmi.edu] for additional information and ordering.

RT-PCR using Qiagen's PyroMark OneStep RT-PCR Kit or One-Step RT-PCR Kit

The Qiagen OneStep RT-PCR Kits provide highly sensitive and specific reverse transcription of any RNA template by using a blend of Sensiscript and Omniscript Reverse Transcriptases, followed by highly specific and reliable amplification of cDNA using HotStarTaq DNA Polymerase. The entire process takes place in one tube reducing the risk of contamination. The RT-PCR product generated from the OneStep RT-PCR Kits can be used for Pyrosequencing applications such as genotyping and allele-specific gene expression analysis.

Pricing and Ordering

Pricing is project specific. Please contact Laura Kasch at 410-614-3830 or lkasch@jhmi.edu for additional information and ordering.

Custom Gene Expression Arrays

Custom Gene Expression Arrays may be ordered and run through our facility using Life Technologies' OpenArray chips. These chips are ideal for investigators who wish to look at multiple assays on medium to large numbers of samples. The technology spots Taqman assays onto chips, which are then run in our QuantStudio 12K flex machine. Each chip can assay between 12 and 48 samples at once, depending on the number of assays on the chip. Chips can be formatted with 18, 56, 112, 168 or 224 assays. There is a minimum order of 10 chips, but smaller projects are often cost effective, even when excess chips must be ordered.

Pricing

Pricing varies by number of gene expression assays and sample numbers. Chips that require custom design assays are more expensive. Examples using minimum numbers, assuming inventoried assays, are given below, but please contact us at customorders@jhmi.edu for detailed information [410-614-0702]. If you would run your samples in triplicate in a standard gene expression assay, you should do so with these assays as well. Sample numbers given below *do not* take that into consideration.

Chip Format	Number of Samples/Chip	Total Samples	Price	Total cost**
18 Assays*	48	480*	Chips: $7,334 Other costs: $1,240	$8,574
56 Assays	48	480	Chips: $8,369.50 Other costs: $1,240	$9,609.50
112 Assays	24	240	Chips: $9,433.50 Other costs: $1,240	$10,673.50
168 Assays	16	160	Chips: $10,469 Other costs $1,240	$11,709
224 Assay	12	120	Chips: $11,495 Other costs: $1,240	$12,735

*18 assay-formatted chips are plated in triplicate, so each sample is used once, but run 3 times.
**Pricing is for chips of entirely inventoried assays. Chips made with some or all custom assays will be about $4,000 more expensive.

Fixed Content Gene Expression Arrays

ThermoFisher/Life Technologies makes several different fixed content array panels for use on the OpenArray system. These chips can be ordered one at a time, and typically contain assays for specific pathways along with several endogenous controls.

Endogenous Control Panel

This panel targets 56 constitutively expressed human genes. Designed to function as a quality control panel for testing sample preparation methods prior to using custom OpenArray Gene Expression plates. Each chip tests 48 samples.

Pricing (Discounts available for projects of 11 or more chips.**)**

1 chip (48 samples)	2 chips	3 chips	4 chips
$680	$1,145	$1,620	$2,100

Specific Pathway Panels

Taqman Human Cancer Panel: This panel targets genes related to DNA repair, angiogenesis, cell adhesion, and ECM, as well as genes involved in the cell cycle and apoptosis, and many of the genes encoding kinases and transcription factors that have been found to be differentially expressed in early cancer and metastatic disease. The 624 genes have been validated for pluripotency. Twenty-four endogenous controls are included for normalization. Each chip tests 4 samples.

Taqman Human Inflammation Panel: This panel covers 586 genes that have been studied as targets for a range of inflammatory disease, plus 21 endogenous control genes. Each chip tests 4 samples.

Taqman Mouse Inflammation Panel: This panel covers 632 genes that have been studied as targets for a range of inflammatory diseases, plus 16 endogenous control genes. Each chip tests 4 samples.

Taqman Human Kinome Panel: This panel targets 772 well-defined genes for human kinases and provides 56 endogenous control genes for normalization. Genes for the panel were chosen based on primary literature and publications. Each chip tests 3 samples (or one sample in triplicate).

Taqman OpenArray Human Signal Transduction Panel: This panel contains 573 signal transduction-related genes plus 24 endogenous controls for normalization. The JAK-STAT, NF κ B, Akt, GPCR, cAMP, and MAP kinase pathways are well represented. Each chip tests 4 samples.

Taqman Stem Cell Panel: This panel targets 609 genes validated for pluripotency, plus 22 endogenous controls for normalization. They use a well-defined set of validated gene expression markers to characterize human embryonic stem (ES) cell identity and assess phenotypic variations between embryonic stem cell isolates. The gene content of this OpenArray® plate resulted directly from the work of the I.S.C.I consortium and characterization of human embryonic stem cell lines by the International Stem Cell Initiative. Each chip tests 4 samples.

Pricing

1 chip*	2 chips	3 chips	4 chips**
$880	$1,560	$2,240	$2,100

*Sample number varies by pathway. See descriptions above for specifics.
** Discounts available for projects of 11 or more of the same chip. Contact us at customorders@jhmi.edu for more information.

MicroRNA profiling

Taqman MicroRNA Profiling (Human and Rodent)

We feature Taqman MicroRNA profiling using the QuantStudio 12K Flex Real-Time PCR System. This system allows you to look up to 758 unique assays per sample, quickly and efficiently with only 200ng of total RNA needed for a full miRNA profile. This new, high throughput technology allows us to analyze dozens of samples in a day, generating thousands of data points, at reasonable prices, using highly sensitive and highly specific Taqman assays. Human and rodent chips are available. We can generate the microRNA specific cDNAs from your total RNA sample for an additional charge. Please contact the GRCF at 410-955-2836 or customorders@jhmi.edu.

Pricing*

Number of Samples	Standard service	Standard Service w/ cDNA synthesis
3*	$800	$881
6	$1,400	$1,562
9	$2,000	$2,243
12	$2,600	$2,924

For pricing for projects of more than 300 samples, or if you wish to do the preamplification yourself, please contact the GRCF at 410-955-2836 or customorders@jhmi.edu.

*Samples must be run in multiples of 3 (or in triplicate).

Real Time PCR Equipment (Self Service)

Two Life Technologies QuantStudio 12K Flex machines and a Taqman 7900 are available for use by appointment, in Blalock 1005. All machines accommodate 96 & 384 well plates as well as Taqman Low Density array (TLDA) microfluidic cards. The 12K Flex machines can run in fast mode, as well, reducing your run time, if your assay has been optimized for fast mode. This equipment may be used for SNP genotyping, gene expression, CNV analysis and microRNA assays.

Investigators may reserve the machines by the hour, for assays recording real-time metrics or in 15-minute time increments for end-point reads. All reactions should be set up by the investigators in their own labs and the plate brought at the appropriate step in the process for loading on the machine. The specialized centrifuge and staking equipment necessary for loading the microfluidic cards is available for use in our lab. At the completion of the run, investigators should return and retrieve their data on a flash drive. A typical gene expression run requires a 3-hour reservation to ensure that you have enough time to fill out run details and retrieve data. A fast run typically requires a 1.5 hour reservation. Reservations are scheduled on a first come, first served basis using CrossLab. Detailed instructions for making the reservations and setting up your CrossLab account are available on our website: https://grcf.jhmi.edu/dna-services/rna-services/real-time-pcr-equipment/. Reservations are available from 7 AM through 4 PM each day. The 4 PM slot runs overnight. The final time slot of the day is for experienced users only.

Pricing

- $20 per hour; $10 for a 15 minute end-point read

RNA Isolation

The GRCF offers RNA isolation from PAXgene blood collection tubes, tissues (fresh or RNAlater preserved) and cultured cells. RNA is suitable for many downstream applications including cDNA synthesis, qPCR, Northern blots and library construction.

Qualitative analysis of RNA using a Fragment Analyzer (Advanced Analytical Technologies, Inc.) is available. $160 for up to 10 samples per run. Discounts given for multiple sample sets of 10. The system gives results similar and comparable to a Agilent BioAnalyzer. Advanced Analytical's PROSize software determines a RQN (RNA Quality Number) on a scale from 1 to 10. Nanodrop analysis is also available.

Please contact Laura Kasch [410-614-3830; lkasch@jhmi.edu] for additional information and ordering.

Pricing

Source	Sample Size	Yield	Charge
Blood	PAXgene collection tube	> 3µg (total RNA)	$28
Tissue	<30mg	up to 100µg total RNA	$30
Tissue	< 30mg	up to 100µg total RNA plus miRNA and small RNA	$35
Cultured Cells	< 1 x 10E7 cells	up to 35µg	$25 (RNeasy Mini Kit)
Cultured Cells	< 1 x 10E7 cells	total RNA plus miRNA and small RNA	$30
Plasma/Serum	Up to 240ul	total RNA	$30 (RNeasy Micro Kit)

JH Customers: Drop off on dry ice in Blalock 1004, Monday-Friday from 9 am – 11 am

RNAseq

The GRCF offers QC, library prep and sequencing of RNA. Due to the nature of these experiments, it is beneficial to discuss sequencing strategy prior to sample submission. We offer free consultation. Please contact David Mohr (dwmohr@jhmi.edu) to discuss your project in detail.

We offer simple, per lane and per flowcell pricing, which allows the investigator control over how many reads required per sample. Please see ENCODE's best practices for current guidelines on RNASeq experimental design:

http://encodeproject.org/ENCODE/protocols/dataStandards/RNA_standards_v1_2011_May.pdf

Sample Requirements

Please provide us with high quality total RNA (RIN >8.5). We request >500ng for standard prep, but can work with less if required. We strongly encourage you to QC your RNA prior to submission, as high quality starting material is the key to success. If you cannot QC your sample prior to submission, we can do so for you at a cost of $20/sample.

Sequencing Cost

Sequencing costs vary based on read length and depth per sample required. You can multiplex samples in a single lane to save money. Please see our High Throughput Sequencing page for information on per lane pricing and data yield: http://grcf.jhmi.edu/hts

Analysis

We collaborate with the JHU Computational Biology Consulitng Core for RNASeq analysis. Please visit their website for pricing information: http://ccb.jhu.edu/cbcc/index.shtml.

Sequencing

High Throughput Sequencing

At the GRCF High Throughput Sequencing Center, our goal is to provide the research community at Johns Hopkins University with access to 'next generation' sequencing platforms. We currently feature three HiSeq 2500 instruments and two MiSeq instruments, and an Ion Proton (currently in R&D). We do our best to sequence samples in a timely manner, but our first priority is high quality data.

We offer free consultation. Please contact David Mohr [dwmohr@jhmi.edu] to discuss your project in detail.

NEW RAPID PER FLOWCELL PRICING

If you submit a single pool for sequencing on a single Rapid Flowcell (ie. 2 lanes), you can take advantage of lower pricing and faster turnaround times (24-72 hours depending on read length). All barcodes must be unique, and all samples must be in a single pool.

Per Flowcell Pricing

Single Read Flowcell: ~300 million reads

- 50 bp: $2000 per flowcell
- 75 bp: $2400 per flowcell
- 100 bp: $2800 per flowcell
- 150 bp: $3600 per flowcell

Paired End Flowcell: ~600 million reads

- 50 bp (x2): $3400 per flowcell
- 75 bp (x2): $4000 per flowcell
- 100 bp (x2): $4400 per flowcell
- 150 bp (x2): $5400 per flowcell

Per Lane Pricing

Single Reads:

- **50 cycles:** $1,200 per lane
- **100 cycles:** $1,600 per lane
- **150 cycles:** $2,000 per lane

Paired End Reads:

- **50 cycles (x2):** $1,900 per lane
- **100 cycles (x2):** $2,400 per lane
- **150 cycles (x2):** $2,900 per lane

Non-standard read lengths are also available, provided they are submitted in pairs (enough to start a 2500 run). Please inquire about pricing. High Output Runs are available, but you will need to submit a full flowcell (ie. 8 lanes/libraries) at a time. Yield is up to 2 billion single read or 4 billion paired-end reads per flowcell. Please inquire for pricing.

Library Prep: $250/sample

Sample Requirements

Completed Libraries: Please submit 10 ul of your sample at 2nM. Samples must be pooled. We will do a QC check via Bioanalyzer to increase the likelihood of quality data, but you should quantitate your sample as accurately

as possible. Nanodrop is not reliable. qPCR is by far the most accurate, but intercalating dye methods can be used.

Library Prep: Please provide us with >500ng of high molecular weight DNA/RNA. Please contact us to discuss sample submission.

Data Yield

- Our facility features the HiSeq 2500 platform. We typically run our instruments in Rapid Mode, due to the fast run times and low error rates. Yield is dependent upon several factors:
- Read Length: the longer the read, the more data.
- Read Type: paired end reads yield twice the data as single read.
- Optimal Cluster density: it is imperative to accurately quantitate your library to ensure high data yield, as we load picomolar amounts on the sequencer. We do our best to QC libraries before sequencing, but we cannot pool samples for you.
- High Quality Library: libraries that contain a high level of adapter dimers will yield significantly less data, as the fragments will hybridize to the flowcell. Similarly, over amplified libraries can negatively impact yield.
- Uniform Base composition**:** libraries that have uneven base composition tend to pose problems for the HiSeq analysis software. These issues can be mitigated using several strategies, but the net effect will be lower data yield per lane than a balanced library.

While we regularly achieve greater than 'spec' yields from the HiSeq2500, often matching yields for High Output mode, it is best to be conservative when planning your experiments.

We will also be happy to run your samples in High Output mode, but you will need to submit a full flowcell (i.e. 8 lanes/libraries) at a time.

Data Delivery

Per lane sequencing: Data will be returned in Sanger FASTQ format via our high-speed aspera server

End to end services: alignment files, variant calls, and any intermediate files you wish via aspera server

Whole Genome: pipeline data returned via aspera server

Medium Throughput Sequencing

Per Run Pricing

MiSeq reagents are sold by cycle number. They can be run in single/paired end, and/or indexed mode.

- **50 cycles:** $900 per run
- **300 cycles:** $1,000 per run
- **500 cycles:** $1,100 per run
- **600 cycles:** $1,400 per run

Sample Requirements

Please submit 10 μ l of your sample at 2nM. Samples must be pooled. We will do a QC check via Bioanalyzer to increase the likelihood of quality data, but you should quantitate your sample as accurately as possible. Nanodrop is not reliable. qPCR is by far the most accurate, but intercalating dye methods can be used.

Data Delivery

Data will be returned in Sanger FASTQ format via our high-speed aspera server.

Pyrosequencing

Pyrosequencing is a method of sequencing that relies on light emitted in an enzymatic reaction set in motion by the release of pyrophosphate when a base is added during the sequencing process. The results are quantitative, making the method ideal for sequencing samples of known sequence that may have mutations in proportions as low as 5%, such as tumor samples or mixed viral populations. Test kits exist for APOE, BRAF, KRAS, HFE and MTHFR, but any small region (around 80 bases) can be analyzed with custom primers. Assay design and analysis software is available for use by any Johns Hopkins investigator.

This method can be used for characterization of contiguous and multivariable mutations, LOH analysis, unambiguous, fully quantitative genotyping that distinguishes multi-site variations from single nucleotide polymorphisms.

Microbial identification and drug resistance typing is another potential use of this method. It provides rapid and reliable high-throughput screening. Mutations can be accurately identified without use of expensive labels and dyes.

Specific regions of methylation can be assayed via sequencing on the Pyromark Q48 system as well. Bisulfite converted DNA is PCR amplified with a biotinylated primer pair. The non-biotinylated strand is sequenced in the Pyromark system. Custom regions can be amplified, with specific analysis software is available for use by customers. Qiagen also has over 30,000 assays designed for CpG Islands throughout the human genome, which can be ordered through our Geneglobe.com service. Please see the products section of this catalog for more information.

Ordering

To place an order, use the Pyrosequencing order form on the GRCF ordering server: https://jhu.genesifter.net/gsle/mainPage. Samples must be dropped off before 4:30. Results will be available on the JHU ordering server the next business day.

Pricing

Number of Samples	Advanced Reactions
< samples	$10.25/sample
Samples in multiples of 47	$10.00/sample

Sanger Sequencing

Sanger sequencing services are provided using the Applied Biosystems 3730xl DNA Analyzer. These machines utilize a one-capillary cycle sequencing process with refined, four-dye fluorescent labeling methods and a real-time scanning detector. The biochemistry of the one-lane sequencing is similar to Sanger-based methods.

The GRCF ordering server (https://jhu.genesifter.net) automatically processes data after electrophoresis is complete and provides quality assessment for each sample. Data is available for download, viewing, and editing. The service provides standard sequencing primers for several vectors. Custom primers should be provided by the user and premixed with the template. Primers can be ordered through our facility using one of our portals as well. See the products section of this catalog for more information.

Turnaround Time

Samples dropped off in the Blalock building by 4 PM will be ready by 10 AM the following business day. Samples dropped off after 4 PM will be held for processing the next day. Samples should be in our remote locations by the following times: Asthma and Allergy Building at Bayview by 11:00 AM, in Croft Hall and UTL on the Homewood

campus by noon, and in CRB I B02A by 3:00 PM, but pickups may vary depending on staffing. Data release will depend on the pickup schedule of the day concerned.

Same day sequencing service is available at a higher fee per sample, with a minimum of 5 samples. For same day sequencing, samples must be ordered on the JHU ordering server and physically present in our facility by 9 AM and the data will released by 5 PM.

Pricing

- Single pre-mixed template & primer: $5.75
- 95 samples in a 96-well plate: $5.50 per sample.
- BAC protocol reactions (used on BACs, other large templates or very GC rich templates): $21
- Same day service: $20 per sample, minimum of 5 samples

PCR Amplification Support Services

Pyrosequencing Projects

PCR amplification support for Pyrosequencing methylation studies are available to customers utilizing the GRCF Pyrosequencing service. We will amplify your samples using a customer supplied Qiagen predesigned or custom kit. Service includes PCR of samples, amplification confirmation by agarose gel electrophoresis and submission for Pyrosequencing.

Sanger Sequencing Projects

For customers interested in custom Sanger sequencing projects we can help you with design of primers, development of PCR amplification conditions, amplification of samples, and sequence analysis.

Pricing

Pricing is sample number dependent. Please contact Laura Kasch [410-614-3830; lkasch@jhmi.edu] for a quote and ordering instructions.

Whole Exome/Targeted Sequencing

Exome Sequencing

In conjunction with the Center for Inherited Disease Research, we have developed an extensive, fully automated, production-scale pipeline for processing of both whole exome and custom capture samples. We currently use Agilent's SureSelect Target Enrichment platform.

Lower cost subsidized whole exome and custom targeted sequencing services are available through the NIH CIDR Program: http://www.cidr.jhmi.edu

Pricing

$1350/exome (1-8 samples)
$970/exome (9-72 samples)
$650/exome (batches of 72)

Pricing is for >90% targeted at 20x. If project needs require a different depth metric, please inquire.

Please inquire about custom capture, as pricing changes depending on capture size and sample volume. Capture sizes can range from 500Kb and up.

Sample Requirements

- 200ng-2.5ug of high molecular weight DNA at 50ng/μl
- DNA should be sent in 1xTE, pH8.0(1mM Tris, 1mM EDTA). Please avoid using water.
- DNA source: blood, cell line, or saliva. Other sources can be used with caveats.

Service Overview

- DNA QC
- Sample pre-testing using a high density SNP array
- Automated Library Prep
- Automated Capture
- Sequencing to a minimum completeness level of 90% coverage at 20X or greater
- Target enrichment report, including capture specificity and completeness
- Quality metrics, including mapping statistics, library fragment size, hybridization and selection metrics, mapping stats, GC bias, and basecall quality distributions
- Sensitivity/Specificity to SNP array data
- Concordance with array data
- Annotated SNP/indel list for targeted regions (dbsnp, SNP type, refseq genes, etc.)

Data Quality

We are committed to providing the highest quality exome and custom capture data available. A team of dedicated scientists review all data we produce. Our current analysis team consists of at least 4 scientists, 3 laboratory managers, 3 statisticians, and 3 bioinformaticians.

We sequence to a completeness metric rather than mean depth as the former gives a much better indication of how many genomic positions are 'callable'. Depth is a poor metric for assessing the quality of exome data. Capture efficiency, library duplication levels, and library complexity are a few examples of factors that can determine how well your exome is covered.

Data quality is monitored and evaluated using a robust alignment and variant calling workflow implemented via CIDRSeqSuite, our in-house pipeline.

Our pipeline is based on open source tools including bwa, Picard, and the GATK2. We can provide detailed information upon request.

Data Delivery

Data will be returned via our high-speed aspera server. Our typical release includes the following:

- Annotated variant lists
- SNPS/indels in VCF format
- BAM alignment files
- QC report
- BED files for regions targeted
- Genotyping files
- Analysis Pipeline details

Whole Genome Sequencing

The GRCF High Throughput Sequencing Center has teamed up with external XTen providers to offer complete **human** genome sequencing to the Johns Hopkins University.

We are happy to provide in-house whole genome sequencing, but our prices cannot match those of XTen providors due to reagent cost.

For more information please contact the GRCF (dwmohr@jhmi.edu).

Single Cell Genomics

The GRCF offers a wide and growing range of genomics applications for single cells, including RNA-seq, gene expression profiling by qPCR and DNA amplification for whole-genome or targeted (exome or PCR-based analysis) through two workflows: **10x Genomics Chromium** platform (similar to Drop Seq) and **Fluidigm's C1** Single Cell Auto-Prep.

10x Genomics Chromium

Drop Seq technology as presented through the **10x Genomics Chromium Platform** offers a high throughput molecular barcoding and analysis suite that delivers cell-by-cell 3'end counting of mRNA transcripts for thousands of cells per run. This technology supports a broad range of applications, including cancer-cell transcriptomics and cell-type identification and discovery. Because the platform works with short read sequencers, it integrates easily into the existing GRCF RNAseq workflow allowing for an end to end service.

Fluidigm C1

This system offers within specific cell size ranges, isolation and processing of up to 96 cells to produce pre-amplified cDNA or amplified genomic DNA for downstream analysis, including sequencing on Illumina platforms. The most commonly used application for the C1 single-cell system is currently RNA-seq. The whole process from cell capture to sequence-ready libraries can be done quickly and efficiently to deliver gene expression data from many diverse cell populations.

Aside from numbers of cells that can be assayed and the uniform cell size requirements of the C1, the chief distinction between the platforms is that 10X currently only provides sequence at the 3' end of mRNAs while the C1 produces random-primed cDNAs anywhere in the RNA. Further, the well-characterized pipeline allows the GRCF to offer analysis for 10X Genomics data. In both systems, the GRCF cost for sequencing will vary based on read length.

Single cell genomics through the GRCF is a joint effort between the GRCF Biorepository & Cell Center and GRCF DNA services center to allow for a one-stop single cell isolation, sequencing and analysis service. All single cell genomic service requests must be prearranged to ensure a smooth capture.

Contact us today (bioprocessing@jhmi.edu or 410-614-5201) for more information or to schedule for your experiment!

Products

Core Store

The Core Store is a division of the Genetic Resources Core Facility of the Johns Hopkins University School of Medicine. In operation since 1989, the Core Store is a non-profit resource that offers appreciable savings and fast delivery of a wide variety of research products. The Core Store provides one-stop shopping, saving researchers both time and money. In addition to its product offering, the Store charges no shipping and handling fees and has free delivery to three JHU campuses.

Store Hours

Monday – Friday 9:00am – 5:00pm (Closed from 1:00pm – 1:30pm daily)

The 24/7 Vending Center, http://grcf.jhmi.edu/core-store/core-store-247/, is always open with locations in: Blalock 1026, CRB I-B02A, & the Asthma & Allergy Center 1A.C4

Contact Information

1026 Blalock Building
600 N. Wolfe Street
Baltimore, MD 21287
Phone: (410) 614-1647
FAX: (410) 614-9752
Email: jhucorestore@jhmi.edu
Website: grcf.jhmi.edu/core-store/

CRISPRs

Sigma-Aldrich CRISPR products are available through our facility via the Sigma-Aldrich CRISPR Core Partnership program. Working together, we will provide you with cost effective, high quality products, full technical support, early access to new technology, scientific seminars and webinars, a diverse portfolio, and global networking events. Through this program, Sigma-Aldrich will do all of the design and construction work for you supplying ready-to-transfect/transduce CRISPRs in the following formats:

- All-in-one vectors
- Dual vectors (Cas9 and gRNA separate)
- Paired nickases
- mRNA
- Lenti virus

Validated CRISPRs, Synthetic gRNAs/Cas9 Proteins, and Pooled & Arrayed Libraries are also available.

For more product information see: the Sigma-Aldrich CRISPR website or their CRISPR technical bulletin.

Pricing:

CRISPRs start as low as $385 each. Pricing is dependent on product selected. See the CRISPR section of our web-site for details (https://grcf.jhmi.edu/products/crisprs/).

Ordering*:

Using the ordering instructions on our web-site (https://grcf.jhmi.edu/products/crisprs/), complete the pre-designed or custom order form and email it to customorders@jhmi.edu, any day of the week. Orders will be accumulated and placed on Wednesdays. If you have a rush order, please indicate this in your email, and we will do our best to accommodate your needs.

**Ordering lentivirus vectors from this site requires that investigators have a current recombinant DNA and infectious agent registration for this material from the Johns Hopkins Biosafety Office, http://www.hopkinsmedicine.org/hse/biosafety/*

Dry Ice

Is available at Blalock 1017, Monday – Thursday, 7:30 am – 4:30 pm and Fridays 7:30 am - 4:00 pm

- 1/2″ diameter dry ice pellets
- Used primarily for shipping and transport of temperature-sensitive cells and reagents
- Sold in 1-pound quantities or more
- Bring your own container

Dry ice purchases are made using CrossLab Please make sure you are authorized to purchase items with your budget number in CrossLab prior to coming to make your purchase. If you need help setting up your CrossLab account, detailed instructions can be found on the Core-in-a-Box website:
http://www.hopkinsmedicine.org/research/resources/synergy/core-in-a-box/finder/ilabs-support.html

For more information, please contact us at: bioshipping@jhmi.edu

Genes and Gene Fragments

Synthetic Genes

DNA synthesis technology now allows entire genes to be synthesized and inserted into a vector, ready for cloning and other applications. This can be especially helpful for difficult to clone sequences or for the construction of specific mutations. Custom genes are delivered in standard vectors, but may be ordered in custom vectors for an additional charge. Minimum yield is 2 µg of plasmid. Genes typically take between 8 and 25 days to ship, depending on the length and difficulty of the sequence.

Genes may be ordered from IDT through the Johns Hopkins University portal:
http://www.idtdna.com/JohnsHopkins/

IDT adheres to the International Gene Synthesis Consortium's protocols and screens the sequences to identify regulated and potentially dangerous pathogen sequences.

Pricing:

Size	Price
Mini-genes <500 bp	$198.00 (flat fee)
Genes (501-1500 bp)	$0.45/base
Genes (1500 - 3000 bp)	$0.40/base
Genes (3001-5000 bp)	$0.40/base
Genes (5001+ bp)	$0.54/base

gBlocks® Gene Fragments

gBlocks® Gene Fragments are double-stranded, sequence-verified genomic blocks that ship in only a few working days for affordable and easy gene construction or modification, applications such as antibody research and CRISPR-mediated genome editing, use as qPCR standards, and more.

gBlocks® Gene Fragments Libraries are pools of gBlocks Gene Fragments that contain up to 18 consecutive variable bases (N or K) for recombinant antibody generation or protein engineering.

gBlocks® may be ordered from IDT through the Johns Hopkins University portal:
http://www.idtdna.com/JohnsHopkins/

IDT adheres to the International Gene Synthesis Consortium's protocols and screens the sequences to identify regulated and potentially dangerous pathogen sequences.

Pricing

Size	Price
125-250 bp	$89
251-500 bp	$89
501-750 bp	$129
751-1000 bp	$149
Larger sizes also available	See web-site

Oligonucleotides

The DNA Analysis Facility offers the synthesis of oligonucleotides through several vendors, including IDT and MilliporeSigma. Ordering through the Johns Hopkins University portal lets you take advantage of lower pricing and free shipping. Oligos can be delivered to your lab by the Core Store for free or picked up in our office in Blalock 1004.

You can access the Johns Hopkins specific portals by clicking the appropriate button.

IDT: http://www.idtdna.com/JohnsHopkins/
MilliporeSigma: http://www.sigmaaldrich.com/configurator/servlet/DesignCenter

Please note that you must create a new username and password for each company, even if you have been ordering from their standard web site. If you don't, you will not receive the discounted pricing below, and you will be charged shipping. Specialized quotes from sales representatives cannot be ordered through these portals.

Comparison charts of pricing, size limitations and guaranteed minimum yields are below to help you select a company. Prices listed below are for standard, unmodified oligos, delivered in lyophilized in tubes. All MilliporeSigma oligos ordered before 1 PM eastern time are shipped as "same day" oligos, arriving within 24 hours of ordering, at no extra charge. IDT ships their standard oligos to arrive within 48 hours of ordering. They offer "same day" oligos with higher pricing then listed below and charge shipping. See each company's portal for pricing.

Oligo orders must be placed by 1 p.m. for standard shipping times to apply.

Pricing

Company	Synthesis Scale					
	25 nmole*	50 nmole*	100 nmole*	200 nmole*	250 nmole*	1 µmol**
IDT	$0.15	N/A	$0.36	N/A	$0.58	$0.96
MilliporeSigma	$0.15	$0.23	N/A	$0.53	N/A	$1.00

*See table below for size limitations

**Larger quantities available from all companies, please call 410-955-2836 for pricing.

Size limitations

Company	Oligo Lengths					
	25 nmole	50 nmole	100 nmole	200 nmole	250 nmole	1 µmol
IDT	15-60mer	N/A	10-90mer	N/A	5-100mer	5-100mer
MilliporeSigma	2-60mer	2-120mer	N/A	2-120mer	N/A	2-120mer

Guaranteed Minimum Yield

Company	Minimum Yield (OD/µg)					
	25 nmole	50 nmole	100 nmole	200 nmole	250 nmole	1 µmol
IDT	3.0	N/A	6.0	N/A	15.0	45.0
MilliporeSigma	3.0	5.0	N/A	12.0	N/A	40.0

Long Oligos

IDT offer long oligos up to 200 bp in length. Ultramers can be PAGE purified for an additional fee. Purification will lower yield.

MilliporeSigma offers long oligo synthesis up to 180 bp. Any sequence >120 bp is reviewed by a scientist for synthesis feasibility. To maintain sequence purification >95% and minimize truncation, the minimum scale for long oligos is 0.2 umol and PAGE purification. Please email (customorders@jhmi.edu) your requests to us, and we will have MilliporeSigma provide a custom quote.

Pricing

Company	Synthesis Yield		Purification
	3-4 nmole	20 nmole	HPLC
IDT	$0.65/base	$1.34/base	$94.50
MilliporeSigma	Ask for quote	Ask for quote	Included in quote

RNA Oligonucleotides

Custom RNA Oligos

Custom RNA oligos can be ordered from all of our portals. They may be purified via HPLC or PAGE for an additional fee. Some modifications are available, see the individual portals for details. RNA oligos usually arrive six business days after ordering, purified oligos take longer. For more information, see the company portals, below.

IDT: http://www.idtdna.com/JohnsHopkins/

MilliporeSigma: http://www.sigmaaldrich.com/configurator/servlet/DesignCenter

Pricing

Company	RNA base				
	50 nmole	100 nmole	200 nmole	250 nmole	1 µmole
IDT	N/A	$5.69	N/A	$7.44	$17.75
MilliporeSigma	$2.82	N/A	$3.62	N/A	$15.75

*Guaranteed Yield, up to 30-mer, including overhang

QIAGEN Geneglobe Assays

All assays found on QIAGEN's Geneglobe site (http://qiagen.com/geneglobe) can be ordered through the DNA Analysis Facility.

Products include assays for:

- Gene silencing (siRNAs in several different formats)
- Gene expression analysis (RT-PCR primer sets)
- miRNA (detection primers, mimics, inhibitors, precursor assays, custom assay designs)
- Expression of proteins
- Next gen sequencing primers
- DNA methylation (including Pyrosequencing assays)

Order through the GRCF to receive a discount and free shipping on all orders. To order:

1. Go to QIAGEN's site
2. Fill up your shopping cart
3. Save the cart
4. e-mail it to yourself and customorders@jhmi.edu with the following information:
    a. PI name
    b. budget (IO#) number
    c. contact phone number.

For more information, email us at (customorders@jhmi.edu) or call 410-955-2836.

si/shRNA

Custom siRNA

Custom siRNAs can be used in cell culture experiments to silence genes. They can be ordered Simplex or Duplex, from IDT and MilliporeSigma. An optional overhang can be included. siRNAs must be between 19 and 30 bases in length. Pricing is a flat fee, Purification via HPLC or PAGE is extra. siRNAs typically arrive 7 business days after ordering. Modifications, including 2'O-me bases and Locked Nucleic acids are available.

Place your order through our portals:

IDT: http://www.idtdna.com/JohnsHopkins/

MilliporeSigma: http://www.sigmaaldrich.com/configurator/servlet/DesignCenter

Coming soon: Dharmacon si/shRNAs

Pricing

siRNA, price/base	IDT		MilliporeSigma		
	2 nmole	10 nmole	2 OD	5 OD	10 OD
Unlabeled Simplex	N/A	N/A	$68.43	$110.29	$132.83
Unlabeled Duplex	$81.00	$125.00	$120.75	$201.25	$241.50

* Guaranteed Yield, up to 30-mer, including overhang

Predesigned siRNA/shRNA

Dharmacon, IDT, Life Technologies, Qiagen and MilliporeSigma offer many predesigned siRNA assays. Sigma also offers shRNA. Please see their portals or the specific company pages on the menu bar for details.

Order now:

IDT: http://www.idtdna.com/JohnsHopkins/

Life Technologies; Use the ordering tool on our site: http://grcf.jhmi.edu/products/taqman-assays/

Qiagen: Find assays on http://qiagen.com/geneglobe, save cart, email to customorders@jhmi.edu

Sigma-Aldrich: http://www.sigmaaldrich.com/configurator/servlet/DesignCenter

Watch our web-site for details of the Dharmacon portal, coming in early 2017.

Taqman and PrimeTime Assays

PrimeTime qPCR Assays

PrimeTime qPCR assays come in two formats: Probe based assays and primer only assays.

- Probe based assays may be ordered with a variety of dye and quencher combinations, in three different scales: 100, 500 or 2500 reactions. Predesigned human, mouse and rat assays are available, and IDT also provides tools to help with the design of custom assays.
- Primer only assays are ideal for using with intercalating dye experiments. Each order of these primers is enough for 500 reactions.

Molecular Beacon assays (highly specific, dual labeled, hairpin based probes) are also available with a variety of dye/quencher combinations.

Order now: http://www.idtdna.com/JohnsHopkins/

Surveyor Mutation Assays

Designed to detect mutations in DNA derived from a variety of organisms including bacteria, fungi, plants, and animals, Surveyor® Mutation Detection Kits allow analysis by:

- Standard gel electrophoresis
- WAVE® and WAVE HS Systems

Surveyor Nuclease is provided as a standardized, quality-controlled enzyme formulation in a ready-to-use kit that can be used without further batch-to-batch optimization. All components other than the thermostable DNA polymerase and PCR products are provided. Reaction buffers and positive controls included in the kit allow users to set up and monitor the assays to obtain reproducible results. In-depth Surveyor Mutation Detection Kit User Guides provide detailed instructions and troubleshooting.

Two types of Surveyor Mutation Detection Kits are available:

- Surveyor Mutation Detection Kit for Standard Gel Electrophoresis—S25 (25 rxn), S100 (100 rxn), S1000 (1000 rxn)
- Surveyor Mutation Detection Kit for WAVE® and WAVE HS Systems—W25 (25 rxn), W100 (100 rxn), W1000 (1000 rxn)

Order now: http://www.idtdna.com/JohnsHopkins/

Taqman Assays

ThermoFisher/Life Technologies custom products are available through the GRCF. By ordering through us, you will receive small discount and free shipping on all orders! Orders can be delivered to you lab via the Core Store delivery mechanism or picked up in our office in Blalock 1004. Products available include:

- Taqman Gene Expression Assays, Plates and Arrays
- TaqMan MicroRNA Assays
- SNP Genotyping, CNV, siRNA, and mutation detection assays
- siRNAs

To place your order, use the tool from Life Technologies on our site. Once your cart is full, submit the order, providing the requested information. The tool will email your order to our facility. We will place the order, email you a confirmation and deliver the assays when they arrive.

THE GENETIC RESOURCES CORE STORE

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2017 GRCF Core Store Catalog

Location: East Baltimore, Blalock 1026
Phone: 410-614-1647
Fax: 410-614-9752
Web: http://grcf.jhmi.edu/core-store/
Hours: Monday through Friday
9:00 a.m. – 5:00 p.m. (closed from 1:00 p.m. – 1:30 p.m.)

The Core Store offers greater than 300,000 products from the following suppliers:

Agilent Technologies
Bio-Rad
Cell Signaling Technology
Corning Cellgro
Faster Better Media
GE-Healthcare
Hyclone
Lonza
MilliporeSigma
New England Biolabs
Peprotech
Promega
QIAGEN
Quality Biological
Roche Applied Science
ThermoFisher Scientific
Zymo Research

For a complete listing of products and pricing go to **http://grcf.jhmi.edu/core-store/**

Core Store Contacts

	Phone	Contact	Email
Customer Service	410-614-1647		jhucorestore@jhmi.edu
24/7 Vending Service	410-502-3959	Lee Hilliard	Lhillia1@jhmi.edu
Website		Levelle Blanchard	Lblanch2@jhmi.edu
Billing	410-614-3254	Lisa Wisniewski	Lwisnie1@jhmi.edu
Manager	410-614-1647	Keon Littrell	Klittre1@jhmi.edu
Business Manager	410-614-5976	Kim Brown	kimbrown@jhmi.edu

How to order from the Core Store

- Place your order online at http://grcf.jhmi.edu/core-store/
- Fax order to 410-614-9752
- Stop by Blalock 1026 during normal business hours
- Pick-up an item from one of the 24/7 vending systems

Placing a Special Order

Due to a lack of space, the store cannot stock all products offered on the website. To accommodate your needs, the Core Store will special order over 300,000 items.

- The easiest way to place a special order is on the website at http://grcf.jhmi.edu/core-store/
- Fax special order 410-614-9752.
- Special orders must be placed by 10:30 a.m. for overnight delivery.
- If at any time you desire a product that is not in our catalog, please do not hesitate to call us to see if we can get it for you. Special orders may receive a discount off list price and will not include any shipping costs. If there is a product that is in high demand, let us know, so that we may consider adding it to our stock inventory.

Returns

Returning a stocked item to the Core Store

- Returns must be made within 30 days of date of purchase.
- All returns must be hand delivered in original unopened and unmarked packaging to Blalock 1026. Please remember to bring a copy of the Core Store invoice.

Returning a special order to the company

- Each supplier has specific instructions on returns. Please note that some suppliers will not accept returns. All shipping and restocking fees will be the responsibility of the customer.

- Call a Core Store customer service representative at 410-614-1647 to discuss your options.

Getting a replacement from the company

- Fill out a Core Store product replacement form. The form is available for download from our website.
- Follow instructions on the form and email it to jhucorestore@jhmi.edu or fax it back to 410-614-9752.

All pricing and stocked inventory is subject to change. For the most current pricing please visit our website at http://grcf.jhmi.edu/core-store/

Website

Web Administrator: Levelle Blanchard
Email: lblanch2@jhmi.edu

The website for the Core Store is http://grcf.jhmi.edu/core-store/

The Core Store website is only to be used by Johns Hopkins employees; therefore all users need to go through JHED for authentication.

We *highly recommend* that new customers go to JHED to view their information and add an email address if necessary. To do so:

- Go to the JHED site at http://my.jhu.edu.
- Login using your JHED ID and Password and click on the Login button.
- Click on the MyProfile link in the blue column on the left.
- Update all empty boxes on all pages within your profile to add an email address and click Save myProfile.

Completely log out of your browser before opening up the Core Store website.
If you do not know your JHED ID and password, contact JHED at 410-955-HELP or 410-516-HELP.

The Core Store 24/7 Vending System

The Core Store 24/7 is a vending system that allows access to over 200 of the most commonly used laboratory reagents 24 hours a day, 7 days a week. This service employs Pyxis technology, which utilizes RFID to dispense products in a secure environment.

24/7 Manager: Lee Hilliard
Phone: 410-502-3959
Email: lhillia1@jhmi.edu

24/7 Locations

East Baltimore
Blalock 1026
CRB 1 B02A

Bayview
Asthma & Allergy Building 1A-C4

Getting Started

- Fill out a vending access form. Forms are available at any 24/7 location or on the Core Store website.
- Get trained by a Core Store staff member.
- Start shopping.
- To view a catalog of items available through the Core Store 24/7 go to http://grcf.jhmi.edu/core-store/core-store-247/

If you have any questions concerning this service, please contact Lee Hilliard at lhillia1@jhmi.edu or call 410-502-3959.
Thank you for using the Core Store 24/7!

Store Forms

A complete list of Core Store forms are available for download at http://grcf.jhmi.edu/core-store/downloads-core-store/

Stock Product Listing

Core Store Product Listing Sorted by Description

New England Biolabs	N3232S	1 kb DNA Ladder - 100µg	$39.96
New England Biolabs	N3232L	1 kb DNA Ladder - 500µg	$159.85
ThermoFisher Scientific	10787018	1 kb Plus DNA Ladder - 250µg	$134.25
New England Biolabs	N3231L	100 bp DNA Ladder - 250µg	$168.90
New England Biolabs	N3231S	100 bp DNA Ladder - 50µg	$42.22
New England Biolabs	N0467S	100 bp DNA Ladder, Quick Load - 125 lanes	$61.83
Bio-Rad	170-8352	100 bp, EZ Load Molecular Ruler - 100 lanes	$120.00
Quality Biological	351-059-101	10X RNA Gel Buffer (MOPS) - 500ml	$24.00
Bio-Rad	170-6435	10X Tris Buffered Saline - 1L	$41.00
Bio-Rad	161-0734	10x Tris/Glycine - 1L	$28.00
Bio-Rad	161-0771	10X Tris/Glycine - 5L	$96.00
Bio-Rad	161-0772	10X Tris/Glycine/SDS - 5L	$96.00
Bio-Rad	161-0732	10x Tris/Glycine/SDS Buffer - 1L	$28.00
New England Biolabs	N3200S	2-Log DNA Ladder - 100µg	$42.22
New England Biolabs	N3200L	2-Log DNA Ladder - 500µg	$168.90
ThermoFisher Scientific	21985023	2-Mercaptoethanol, 55mM - 50ml	$34.88
Faster Better Media	SB20-1	20X SB low conductive medium - 1L	$33.00
Bio-Rad	161-0156	30% Acryl/Bis Solution 29:1 - 500ml	$60.00
Bio-Rad	161-0158	30% Acryl/Bis Solution 37.5:1 - 500ml	$60.00
Bio-Rad	161-0144	40% Acryl/Bis Solution 19:1 - 500ml	$73.00
Bio-Rad	161-0148	40% Acryl/Bis Solution 37.5:1 - 500ml	$73.00
Bio-Rad	161-0747	4x Laemmli Sample Buffer - 10ml	$15.00
New England Biolabs	N3236S	50bp DNA Ladder - 100µg	$48.26
Quality Biological	351-008-131	50X TAE Buffer (Tris Acetate) -1L	$34.41
ThermoFisher Scientific	R0611	6X Loading Dye Solution - 5 x 1ml	$30.95
Bio-Rad	223-9441	96 - Well 0.2 ml PCR Plates - 25pk	$225.00
ThermoFisher Scientific	4346907	96 - Well Fast Thermal Cycling Plates - 10pk	$31.57
MilliporeSigma	A6964-100ML	Accutase - 100ml	$29.69
Quality Biological	118-156-721	ACK Lysing Buffer - 4 x 100ml	$48.99
Quality Biological	118-156-101	ACK Lysing Buffer - 500ml	$30.14
New England Biolabs	R0520S	Afl II - 2,000u	$47.50
MilliporeSigma	A6013-500G	Agarose, Type I - 500g	$255.96
New England Biolabs	R3552L	AgeI-HF - 1500u	$213.38
New England Biolabs	R3552S	AgeI-HF - 300u	$52.78
ThermoFisher Scientific	12055091	AIM V Medium, liquid - 500ml	$70.75
Cell Signaling	9272S	Akt Antibody - 100µl	$213.45
MilliporeSigma	A9647-100G	Albumin Fraction V - 100g	$180.77
New England Biolabs	M0290S	Alkaline Phosphatase,Calf Intest(CIP)-1,000u	$56.55
Bio-Rad	161-0700	Ammonium Persulfate - 10g	$14.00

Supplier	Catalog #	Description	Core Store Price
MilliporeSigma	A2942-20ML	Amphotericin B - 20ml	$14.15
Quality Biological	351-344-731	Ampicillin Solution - 10 X 1ml (100mg/ml)	$71.22
MilliporeSigma	A9518-5G	Ampicillin, Sodium Salt - 5g	$24.38
Corning Cellgro	61-238-RH	Ampicillin, Sodium Salt Powder - 10g	$45.85
New England Biolabs	M0289S	Antarctic Phosphatase - 1,000u	$49.01
MilliporeSigma	A2220-1ML	Anti-Flag M2 AB Agarose - 1ml	$436.50
Cell Signaling	7076S	Anti-mouse IgG, HRP-linked Antibody - 1ml	$114.53
Cell Signaling	7074S	Anti-rabbit IgG, HRP-linked Antibody - 1ml	$114.53
ThermoFisher Scientific	R96025	Anti-V5 antibody - 50µl	$183.57
MilliporeSigma	A5955-100ML	Antibiotic Antimycotic (100X) - 100ml	$29.74
ThermoFisher Scientific	15240062	Antibiotic Antimycotic (100X) - 100ml	$33.63
New England Biolabs	R0558S	Asc I - 500u	$49.76
New England Biolabs	P0756S	ATP - (Adenosine-5 Triphosphate) 10 mM - 1ml	$24.88
MilliporeSigma	A7699-1G	ATP (Disodium Salt) - 1g	$75.00
New England Biolabs	R0174S	Avr II - 100u	$51.27
ThermoFisher Scientific	17504044	B-27 Serum Free Supplement (50X) - 10ml	$84.29
ThermoFisher Scientific	12587010	B-27 Supplement w/o Vitamin A (50X) - 10ml	$103.96
New England Biolabs	R3136S	BamH I - HF - 10,000u	$43.73
New England Biolabs	R0539S	Bbs I - 200u	$49.76
Promega	E1605	Beetle Luciferin, Potassium Salt 1g	$273.31
ThermoFisher Scientific	10748010	BENCHMARK™ Prestained Protein Ladder - 500u	$186.38
ThermoFisher Scientific	13256029	bFGF, Human, Recombinant - 10µg	$167.65
New England Biolabs	R0144S	Bgl II - 2,000u	$43.73
Agilent Technologies	230132	BL21-Gold (DE3) Competent Cells - 5 x 0.2ml	$177.83
ThermoFisher Scientific	R21001	Blasticidin - 50mg	$161.76
Corning Cellgro	30-100-RB	Blasticidin S HCl, Powder - 50mg	$98.82
Bio-Rad	170-3965	Blot Paper, Extra Thick, 7.5 x 10cm	$57.00
Bio-Rad	170-6404	Blotting Grade Blocker-NFDM - 300g	$48.00
New England Biolabs	M0367S	Blunt/TA Ligase Master Mix - 50rxns	$72.38
ThermoFisher Scientific	NW04120BOX	Bolt™ 4-12% Bis-Tris Plus 10 Well - 10gels	$113.17
ThermoFisher Scientific	NW04122BOX	Bolt™ 4-12% Bis-Tris Plus 12 Well - 10gels	$113.17
Cell Signaling	9998S	BSA - 50g	$177.01
New England Biolabs	B9000S	BSA-Molecular Biology Grade - 12mg	$21.11
New England Biolabs	R0580S	BsmB I - 200u	$53.53
MilliporeSigma	C1389-1G	Carbenicillin - 1g	$74.67
Cell Signaling	9803S	Cell Lysis Buffer (10X) - 15ml	$52.06
Agilent Technologies	230132	Cells-BL21-Gold (DE3) Competent Cells - 5 x 0.2ml	$177.83
New England Biolabs	C2987H	Cells-NEB 5-Alpha Competent Cells - 20 x .05ml	$144.01
New England Biolabs	C2987I	Cells-NEB 5-alpha Competent E.coli - 6 X 0.2ml	$112.35
New England Biolabs	C2984H	Cells-NEB Turbo Competent E.coli - 20 x .05ml/tube	$190.76
ThermoFisher Scientific	C737303	Cells-One Shot® Stabl3 Competent E. coli - 20 x 50µl	$373.70
ThermoFisher Scientific	C404003	Cells-One Shot® TOP10 Competent E. coli - 20rxns	$347.43
ThermoFisher Scientific	18265017	Cells-SUB Efficiency DH5 Alpha™ Comp Cells - 2ml	$56.26

Supplier	Catalog #	Description	Core Store Price
New England Biolabs	C2988J	Cells-Subcloning Efficiency 5-alpha Comp cells- 6 x 0.4ml	$52.03
Promega	G3580	CellTiter 96® AQueous One Assay - 1000 assays	$289.80
Promega	G7571	CellTiter-Glo® Luminescent Cell Viability Assay	$483.00
New England Biolabs	R0197S	Cla I - 1,000u	$47.50
Bio-Rad	170-5060	Clarity Western ECL Substrate - 200ml	$126.67
Bio-Rad	170-5061	Clarity Western ECL Substrate - 500ml	$239.77
Cell Signaling	9661S	Cleaved Caspase-3 (Asp175) Antibody - 100µl	$249.02
MilliporeSigma	11836153001	cOmplete Mini - 25 tablets	$127.51
MilliporeSigma	11873580001	cOmplete EDTA-free - 20 tablets	$277.87
MilliporeSigma	11836170001	cOmplete Mini, EDTA-free - 25 tablets	$128.40
MilliporeSigma	11697498001	cOmplete Protease Inhibitor - 20 tablets	$272.84
ThermoFisher Scientific	C10228	Countess Chamber Slides - 50 slides	$86.17
Bio-Rad	345-0027	Criterion™ Gel, Tris-HCl 4-15% - 12-2wells	$15.00
Bio-Rad	345-0033	Criterion™ Gel, Tris-HCl 4-20%, 18 wells - 1gel	$15.00
Bio-Rad	345-0034	Criterion™ Gel, Tris-HCl, 4-20%, 26 wells - 1gel	$15.00
Bio-Rad	567-1034	Criterion™ TGX™ 10%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1084	Criterion™ TGX™ 4-15%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1024	Criterion™ TGX™ 7.5%, 18 well 30µl - 1gel	$15.00
MilliporeSigma	10236276001	DAPI (staining reagent) - 10mg	$68.08
ThermoFisher Scientific	R007100	Defined Trypsin Inhibitor-100ml	$39.00
Quality Biological	351-068-131CS	DEPC Treated Water - 10 x 1L	$201.68
Quality Biological	351-068-131	DEPC Treated Water - 1L	$22.41
Quality Biological	351-068-721	DEPC Treated Water - 4 x 100ml	$34.80
ThermoFisher Scientific	15230204	Distilled Water - 10 x 500ml	$68.74
ThermoFisher Scientific	15230162	Distilled Water - 500ml	$8.37
Corning Cellgro	25-055-CV	Distilled Water - 6 x 500ml	$32.93
Corning Cellgro	10-014-CV	DMEM - 1 gm/L glucose - 6 x 500ml	$32.93
Corning Cellgro	10-013-CV	DMEM - 4.5 gm/L glucose - 6 x 500ml	$32.93
ThermoFisher Scientific	11965118	DMEM (1X), high glucose - 10 x 500ml	$79.61
ThermoFisher Scientific	11965092	DMEM (1X), high glucose - 500ml	$8.41
ThermoFisher Scientific	11995073	DMEM (1X), high glucose 10x500ml w/sodium pyruvate	$81.89
ThermoFisher Scientific	11995065	DMEM (1X), high glucose w/ sodium pyruvate - 500ml	$11.29
ThermoFisher Scientific	11885092	DMEM (1X), low glucose - 10 x 500ml	$97.81
ThermoFisher Scientific	11885084	DMEM (1X), low glucose - 500ml	$8.41
MilliporeSigma	D5796-6X500ML	DMEM high glucose - 6 x 500ml	$28.75
Corning Cellgro	10-017-CV	DMEM w/ L-glutamine - 6 x 500ml	$32.93
MilliporeSigma	D5796-500ML	DMEM high glucose - 500ml	$4.96
Corning Cellgro	10-092-CV	DMEM/F-12 - 50/50 Mix - 6 x 500ml	$52.71
Corning Cellgro	15-090-CV	DMEM/F-12 - 50/50 Mix w/o L-Glutamine - 6 x 500ml	$47.12
ThermoFisher Scientific	11330057	DMEM/F-12, liquid (1:1) - 10 x 500ml	$146.51
ThermoFisher Scientific	11330032	DMEM/F-12, liquid (1:1) - 500ml	$31.70
MilliporeSigma	D2650-100ML	DMSO - 100ml	$135.82
Corning Cellgro	25-950-CQC	DMSO - 250ml	$56.04

Supplier	Catalog #	Description	Core Store Price
MilliporeSigma	D2650-5X5ML	DMSO - 5 x 5ml	$45.61
Zymo Research	D4013	DNA Clean & Concentrator-5 w/ Zymo-Spin IC Columns	$64.38
Quality Biological	351-028-661	DNA Gel Loading Solution(5X) - 5 x 10ml	$53.18
New England Biolabs	M0210S	DNA Polymerase I, Klenow Fragment - 200u	$45.99
ThermoFisher Scientific	AM1906	DNA-free™ DNA Removal Kit - 50rxns	$108.65
MilliporeSigma	DN25-100MG	DNase I - 100mg	$58.71
ThermoFisher Scientific	18068015	DNase I - Amplification Grade - 100u	$103.71
MilliporeSigma	10104159001	DNase I (Grade II) - 100mg	$57.96
New England Biolabs	M0303S	DNase I (RNase-Free) - 1,000u	$52.03
QIAGEN	69506	DNeasy Blood & Tissue Kit - 250	$642.74
QIAGEN	69504	DNeasy Blood & Tissue Kit - 50	$149.97
Promega	U1515	dNTP Mix - 1,000µl	$52.61
ThermoFisher Scientific	18427013	dNTP Mix 10mM - 100µl	$32.66
ThermoFisher Scientific	18427088	dNTP Mix 10mM - 1ml	$201.60
ThermoFisher Scientific	R0192	dNTP Mix 10mM - 1ml	$87.87
MilliporeSigma	D7295-.5ML	dNTP Mix 10mM, 5µmol each - .5ml	$45.01
QIAGEN	201901	dNTP Mix PCR Grade - 800µl	$148.78
ThermoFisher Scientific	10297018	dNTP Set 100mM - 4 x 25µmol	$203.38
New England Biolabs	N0447S	dNTP Solution Mix - 8µmol ea	$44.49
New England Biolabs	N0446S	dNTP Solution Set - 25µmol ea	$122.90
MilliporeSigma	D9663-10ML	Donkey serum - 10ml	$29.60
MilliporeSigma	D9891-1G	Doxycycline - 1g	$43.70
ThermoFisher Scientific	14200075	DPBS (10X) - 500ml	$34.34
ThermoFisher Scientific	14190250	DPBS (1X) w/o CaMg - 10 x 500ml	$75.66
ThermoFisher Scientific	14190144	DPBS (1X) w/o CaMg - 500ml	$8.46
Corning Cellgro	21-031-CV	DPBS (1X) w/o CaMg - 6 x 500ml	$32.93
MilliporeSigma	D8537-500ML	DPBS (1X) w/o CaMg- 500ml	$4.96
Quality Biological	114-059-101	DPBS w/ CaMg - 500ml	$9.02
New England Biolabs	R0176S	Dpn I - 1,000u	$47.50
ThermoFisher Scientific	K1081	DreamTaq™ Green PCR Master Mix (2X) - 200rxns	$73.22
MilliporeSigma	D9163-5G	DTT - 5g	$56.35
ThermoFisher Scientific	R0861	DTT - 5g	$80.75
Promega	E2920	Dual-Glo(TM) Luciferase Assay System - 10ml	$200.10
Promega	E1910	Dual-Luciferase® Reporter Assay System - 100 assay	$192.34
Promega	E1960	Dual-Luciferase® Reporter Assay System - 10pk	$1,230.79
ThermoFisher Scientific	10003D	Dynabeads® Protein G - 1ml	$173.27
Quality Biological	112-018-101	E-MEM w/L-glutamine - 500ml	$9.01
GE-Healthcare	RPN2232	ECL Prime Western Blotting rgt, For 1000 cm2	$128.92
GE-Healthcare	RPN2106	ECL Western Blotting Detection Rgts - 2 x 250ml	$167.04
New England Biolabs	R3101S	EcoR I HF - 10,000u	$43.73
New England Biolabs	R3195S	EcoR V HF - 4000u	$43.73
Corning Cellgro	46-034-CI	EDTA .5 M, pH 8.0 - 100ml	$15.29
MilliporeSigma	E7889-100ML	EDTA Disodium Salt - 100ml	$50.81

Supplier	Catalog #	Description	Core Store Price
QIAGEN	12362	EndoFree Plasmid Maxi Kit - 10	$317.64
MilliporeSigma	E9644-.2MG	Epidermal Growth Factor (EGF)Human - 0.2mg	$179.01
ThermoFisher Scientific	A1517001	Essential 8™ Medium w/supplements - 500ml	$193.42
MilliporeSigma	E1510-10ML	Ethidium Bromide - 10ml	$55.74
ThermoFisher Scientific	4385612	Fast SYBR® Green Master Mix - 1 x 5ml	$180.18
ThermoFisher Scientific	26140079	Fetal Bovine Serum U.S., Qualified - 500ml	Market Price
Hyclone	SH3007103	Fetal Bovine Serum, Characterized - 500ml	Market Price
Hyclone	SH3007003	Fetal Bovine Serum, Defined - 500ml	Market Price
Corning Cellgro	35-011-CV	Fetal Bovine Serum, Heat Inactivated - 500ml	Market Price
MilliporeSigma	F4135-500ML	Fetal Bovine Serum, Heat Inactivated - 500ml	Market Price
ThermoFisher Scientific	16140071	Fetal Bovine Serum, Qual, Heat Inactivated - 500ml	Market Price
MilliporeSigma	F6178-500ML	Fetal Bovine Serum, Qualified - 500ml	Market Price
Corning Cellgro	35-010-CV	Fetal Bovine Serum, USDA - 500ml	Market Price
MilliporeSigma	F0291-25UG	Fibroblast growth factor - 25µg	$219.88
MilliporeSigma	F2006-1MG	Fibronectin - 1mg	$96.66
MilliporeSigma	F1141-2MG	Fibronectin - 2mg	$176.40
GE-Healthcare	17-1440-03	Ficoll-Paque™ PLUS - 6 x 500ml	$556.24
GE-Healthcare	17-1440-02	Ficoll-Paque™ PLUS- 6 x 100ml	$162.51
MilliporeSigma	F9037-100ML	Formamide - 100ml	$32.20
MilliporeSigma	F7503-1L	Formamide - 1L	$86.47
Promega	E2691	FuGENE® 6 Transfection Reagent - 1ml	$400.00
Corning Cellgro	61-234-RF	G418 - 1g	$71.08
Corning Cellgro	61-234-RG	G418 - 5g	$201.23
Corning Cellgro	30-234-CR	G418 Sulfate Solution - 20ml	$91.69
ThermoFisher Scientific	11789020	Gateway® BP Clonase II enzyme mix - 20rxns	$201.37
ThermoFisher Scientific	11791020	Gateway® LR Clonase II enzyme mix - 20rxns	$223.85
New England Biolabs	B7021S	Gel Loading Dye Blue (6x) - 4ml	$35.44
ThermoFisher Scientific	NW04120BOX	Gels-Bolt™ 4-12% Bis-Tris Plus 10 Well - 10gels	$113.17
ThermoFisher Scientific	NW04122BOX	Gels-Bolt™ 4-12% Bis-Tris Plus 12 Well - 10gels	$113.17
Bio-Rad	345-0027	Gels-Criterion™ Gel, Tris-HCl 4-15% - 12-2wells	$15.00
Bio-Rad	345-0033	Gels-Criterion™ Gel, Tris-HCl 4-20%, 18 wells - 1gel	$15.00
Bio-Rad	345-0034	Gels-Criterion™ Gel, Tris-HCl, 4-20%, 26 wells - 1gel	$15.00
Bio-Rad	567-1034	Gels-Criterion™ TGX™ 10%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1084	Gels-Criterion™ TGX™ 4-15%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1024	Gels-Criterion™ TGX™ 7.5%, 18 well 30µl - 1gel	$15.00
Bio-Rad	456-1034	Gels-Mini Protean® TGX™ 10% 10well 50µl- 10gels	$102.08
Bio-Rad	456-1033	Gels-Mini Protean® TGX™ 10%, 10-well 30µL-10gels	$102.08
Bio-Rad	456-1083	Gels-Mini Protean® TGX™ 4-15%, 10-well 30ul-10gels	$102.08
Bio-Rad	456-1084	Gels-Mini Protean® TGX™ 4-15%, 10well 50µl - 10gels	$102.08
Bio-Rad	456-1086	Gels-Mini Protean® TGX™ 4-15%, 15-well 15µl - 10gels	$102.08
Bio-Rad	456-1093	Gels-Mini Protean® TGX™ 4-20%, 10-well 30µl - 10gels	$102.08
Bio-Rad	456-1096	Gels-Mini Protean® TGX™ 4-20%,15-well 15µl - 10gels	$102.08
Bio-Rad	456-1023	Gels-Mini Protean® TGX™ 7.5%, 10-well 30µl - 10gels	$102.08

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	XP04205BOX	Gels-Novex WedgeWell 4-20% Tris-Glycine Mini Gels, 15-w	$82.62
ThermoFisher Scientific	NP0322BOX	Gels-NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 12 well -10gels	$133.93
ThermoFisher Scientific	NP0323BOX	Gels-NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 15 well-10gels	$133.93
ThermoFisher Scientific	NP0321BOX	Gels-NuPAGE® 4-12% Bis-Tris Gel 1.0 mm,10 well -10gels	$133.93
ThermoFisher Scientific	NP0335BOX	Gels-NuPAGE® 4-12% Bis-Tris Gel 1.5 mm, 10 well-10gels	$133.93
ThermoFisher Scientific	A1413202	Geltrex LDEV-Free RGF - 5ml	$180.76
Bio-Rad	165-2089	Gene Pulser® Cuvette, 0.1cm - 50pk	$185.00
ThermoFisher Scientific	K0503	GeneJET™ Plasmid Miniprep Kit - 250preps	$227.20
ThermoFisher Scientific	SM0323	GeneRuler™ 100bp DNA Ladder Plus, RTU- 100apps	$66.50
ThermoFisher Scientific	SM0243	GeneRuler™ 100bp DNA Ladder, RTU - 100apps	$55.21
ThermoFisher Scientific	SM0313	GeneRuler™ 1kb DNA Ladder - 500apps	$138.54
ThermoFisher Scientific	10131035	Geneticin® - 20ml	$122.69
New England Biolabs	E2611S	Gibson Assembly Master Mix - 10rxns	$119.89
ThermoFisher Scientific	35050061	GlutaMAX-I Supplement-100ml	$27.37
Quality Biological	118-288-061	Glutamine XL - 100ml	$20.91
GE-Healthcare	GE17-0756-01	Glutathione Sepharose™ - 10ml	$243.01
MilliporeSigma	G6279-1L	Glycerol, SigmaUltra - 1L	$90.67
Bio-Rad	161-0718	Glycine - 1kg	$54.00
ThermoFisher Scientific	R0561	Glycogen - 0.5ml	$59.70
MilliporeSigma	10901393001	Glycogen - 20mg	$128.48
MilliporeSigma	G9023-10ML	Goat Serum - 10ml	$29.60
Promega	A5003	GoScript™ Reverse Transcriptase - 100rxns	$111.38
Promega	A6001	GoTaq® qPCR Master Mix – 200rxns	$216.78
Promega	M3005	GoTaq® DNA Polymerase - 500u	$106.15
Promega	M8295	GoTaq® Flexi DNA Polymerase - 500u	$106.15
Promega	M7123	GoTaq® Green Master Mix - 1000rxns	$283.30
Promega	M7122	GoTaq® Green Master Mix - 100rxns	$32.89
Bio-Rad	HSP-9601	Hard-shell 96 well PCR plates	$213.15
Corning Cellgro	21-021-CV	HBSS (1X) w/o CaMg - 6 x 500ml	$32.93
ThermoFisher Scientific	14170161	HBSS (1X) w/o CaMg -10 x 500ml	$79.54
ThermoFisher Scientific	14170112	HBSS (1X) w/o CaMg- - 500ml	$8.91
ThermoFisher Scientific	14175103	HBSS (1X) w/o phenol red - 10 x 500ml	$83.42
ThermoFisher Scientific	14175095	HBSS (1X) w/o phenol red - 500ml	$9.13
MilliporeSigma	H9394-500ML	HBSS w/o CaMg - 500ml	$4.96
Corning Cellgro	21-022-CV	HBSS w/o CaMg & phenol red - 6 x 500ml	$33.59
Quality Biological	114-062-101	HBSS w/o phenol red & CaMg - 500ml	$11.02
MilliporeSigma	H4034-100G	Hepes - 100g	$58.65
ThermoFisher Scientific	15630080	Hepes Buffer Soln (1M) - 100ml	$33.99
Quality Biological	118-089-721	Hepes Buffer Soln (1M) - 4 x 100ml	$103.90
Agilent Technologies	600675	Herculase® II Fusion DNA Polymerase - 40rxns	$47.88
ThermoFisher Scientific	4368814	High Capacity cDNA Kit - 200rxns	$195.98
ThermoFisher Scientific	4387406	High Capacity RNA-to-cDNA Kit - 50rxns	$153.13
New England Biolabs	R3104S	HINDIII-HF - 10,000u	$43.73

Supplier	Catalog #	Description	Core Store Price
QIAGEN	12662	HiSpeed Plasmid Maxi Kit (10)	$265.48
QIAGEN	12663	HiSpeed Plasmid Maxi Kit (25)	$648.32
QIAGEN	12643	HiSpeed Plasmid Midi Kit (25)	$323.23
MilliporeSigma	H8889-500ML	Histopaque®-1077 - 500ml	$180.16
MilliporeSigma	H1009-100ML	Hydrogen Peroxide - 100ml	$40.30
ThermoFisher Scientific	10687010	Hygromycin B - 20ml	$172.33
Corning Cellgro	30-240-CR	Hygromycin B Solution - 1 x 20ml	$127.37
GE-Healthcare	28-9068-35	Hyperfilm ECL 5x7in - 50 Sheets	$143.84
GE-Healthcare	28-9068-39	Hyperfilm ECL 8x10in - 100 Sheets	$286.52
GE-Healthcare	28-9068-38	Hyperfilm ECL 8x10in - 50 Sheets	$170.52
ThermoFisher Scientific	IB301031	iBlot® Transfer Stack, Regular - 3 x 10sets	$458.80
Quality Biological	112-035-101	IMDM - 500ml	$19.62
ThermoFisher Scientific	12440061	IMDM (1X) - 10 x 500ml	$188.84
ThermoFisher Scientific	12440053	IMDM (1X) - 500ml	$26.05
Bio-Rad	162-0174	ImmunBlot PVDF Membrane - 10pk	$88.00
Bio-Rad	162-0177	ImmunBlot PVDF, 26cm x 3.3m - 1 roll	$335.00
ThermoFisher Scientific	51500056	Insulin-Transferrin-Selenium-X Suppl.(100X) - 10ml	$63.50
ThermoFisher Scientific	12585014	Insulin, Human Recombinant, Zinc Solution - 5ml	$40.27
Corning Cellgro	46-102-RF	IPTG - 1g	$25.25
ThermoFisher Scientific	15529019	IPTG - 1g	$57.98
Bio-Rad	170-8880	iQ SYBR Green Supermix - 100x50µl	$200.97
Bio-Rad	170-8882	iQ SYBR Green Supermix - 500x50µL	$866.40
Bio-Rad	170-8841	iScript™ RT Supermix - 100rxns	$500.00
Bio-Rad	170-8891	iScript™ cDNA Synthesis Kit - 100rxns	$440.00
Bio-Rad	170-8890	iScript™ cDNA Synthesis Kit - 25rxns	$150.00
MilliporeSigma	I9516-500ML	Isopropanol - 500ml	$50.52
Bio-Rad	172-5122	iTaq Univeral SYBR Green SMX - 10ml	$419.46
Bio-Rad	172-5121	iTaq Univeral SYBR Green SMX - 5ml	$219.01
Corning Cellgro	25-800-CR	ITS 100x Solution - 10ml	$34.38
MilliporeSigma	K0879-50MG	Kanamycin - 50mg	$19.85
Quality Biological	120-349-731	Kanamycin 50mg/ml - 10 x 1ml	$62.43
ThermoFisher Scientific	17005042	Keratinocyte-SFM with supplements - 500ml	$89.68
ThermoFisher Scientific	10828028	Knockout™ Serum - 500ml	$310.95
New England Biolabs	R3142S	Kpn I- HF - 4,000u	$47.50
Corning Cellgro	25-005-CI	L-Glutamine - 6 x 100ml	$46.11
Quality Biological	118-084-721EA	L-Glutamine 200mM - 100ml	$18.83
ThermoFisher Scientific	25030081	L-Glutamine 200mM (100X) - 100ml	$17.15
Bio-Rad	161-0737	Laemmli Sample Buffer - 30ml	$14.00
MilliporeSigma	L2020-1MG	Laminin - 1mg	$94.19
ThermoFisher Scientific	23017015	Laminin, Mouse, Natural - 1mg	$122.69
Quality Biological	340-147-231	LB Agar Plates w/50µg/ml Kanamycin - 10ea x 25ml	$25.16
Quality Biological	340-108-231	LB Agar Plates,100µg/ml Ampicillin -10ea	$26.48
MilliporeSigma	L2542-500ML	LB Broth - 500ml	$29.85

Supplier	Catalog #	Description	Core Store Price
Quality Biological	340-004-101CS	LB Broth (Lauria Bertani) - 10 x 500ml	$89.05
Quality Biological	340-004-101	LB Broth (Lauria Bertani) - 500ml	$9.34
ThermoFisher Scientific	11415064	Leibovitz's L-15 Medium w/phenol (1X) - 500ml	$31.87
MilliporeSigma	5401020001	Liberase™ TL Research Grade - 10mg	$55.00
Roche Applied Science	4707516001	LightCycler 480 SYBR Green I Master	$265.41
ThermoFisher Scientific	L3000008	Lipofectamine® 3000 Reagent - 0.75ml	$365.27
ThermoFisher Scientific	L3000015	Lipofectamine® 3000 Reagent - 1.5ml	$605.04
ThermoFisher Scientific	11668027	Lipofectamine® 2000 Transfection Reagent - .75ml	$292.35
ThermoFisher Scientific	11668019	Lipofectamine® 2000 Transfection Reagent - 1.5ml	$539.48
ThermoFisher Scientific	15338100	Lipofectamine® LTX and Plus Reagent - 1ml	$527.44
ThermoFisher Scientific	13778075	Lipofectamine® RNAiMAX - 0.75ml	$399.93
Promega	E1501	Luciferase Assay Reagent - 10pk	$608.93
Promega	E1500	Luciferase Assay System - 100 assays	$90.56
New England Biolabs	E3005S	Luna® Universal One-Step RT-qPCR Kit - 200rxns	$164.27
New England Biolabs	E3005L	Luna® Universal One-Step RT-qPCR Kit - 500rxns	$369.95
New England Biolabs	E3006S	Luna® Universal Probe One-Step RT-qPCR Kit-200rxns	$148.12
New England Biolabs	E3006L	Luna® Universal Probe One-Step RT-qPCR Kit-500rxns	$333.45
New England Biolabs	M3004S	Luna® Universal Probe qPCR Master Mix - 200rxns	$69.50
New England Biolabs	M3004L	Luna® Universal Probe qPCR Master Mix - 500rxns	$156.55
New England Biolabs	M3003S	Luna® Universal qPCR Master Mix - 200rxns	$80.73
New England Biolabs	M3003L	Luna® Universal qPCR Master Mix - 500rxns	$181.82
Corning Cellgro	25-072-CI	Lymphocyte Separation Medium - 1 x 100ml	$12.74
Promega	M1701	M-MLV Reverse Transcriptase - 10,000u	$50.08
Quality Biological	351-033-721	Magnesium Chloride 1m, - 4 x 100ml	$38.70
ThermoFisher Scientific	18258012	MAX Efficiency DH5Alpha™ Competent Cells - 1ml	$183.04
ThermoFisher Scientific	K0221	Maxima™SYBR Green qPCR Master Mix (2X) -2 x 1.25ml	$155.48
ThermoFisher Scientific	16600108	McCoy's 5A Medium (1X) - 10 x 500ml	$148.67
ThermoFisher Scientific	16600082	McCoy's 5A Medium (1X) - 500ml	$24.56
Corning Cellgro	10-050-CV	McCoy's 5A w/L-Glut - 6 x 500ml	$58.59
MilliporeSigma	M7145-100ML	MEM NEAA (100X) - 100ml	$16.47
ThermoFisher Scientific	11140050	MEM NEAA (100X) 10mM - 100ml	$17.24
Corning Cellgro	10-010-CV	MEM w/ Earle's salts & L-glut. (1X) - 6 x 500ml	$32.93
ThermoFisher Scientific	11095098	MEM w/ L-glutamine (1X) - 10 x 500ml	$77.34
ThermoFisher Scientific	11095080	MEM w/ L-glutamine (1X) - 500ml	$9.20
ThermoFisher Scientific	4346906	MicroAmp® Fast Optical 96-Well Plate - 20 plates	$65.65
ThermoFisher Scientific	N8010560	MicroAmp® Optical 96-Well Reaction Plate-10/bx	$48.52
ThermoFisher Scientific	4311971	MicroAmp® Optical Adhesive Film - 100 covers	$169.84
Bio-Rad	MSB-1001	Microseal B Seals - 100pk	$147.90
Bio-Rad	170-4157	Midi PVDF Transfer pack - 10pk	$188.85
Bio-Rad	456-1034	Mini Protean® TGX™ 10% 10well 50µl- 10gels	$102.08
Bio-Rad	456-1033	Mini Protean® TGX™ 10%, 10-well 30µL-10gels	$102.08
Bio-Rad	456-1083	Mini Protean® TGX™ 4-15%, 10-well 30ul-10gels	$102.08
Bio-Rad	456-1084	Mini Protean® TGX™ 4-15%, 10well 50µl - 10gels	$102.08

Supplier	Catalog #	Description	Core Store Price
Bio-Rad	456-1086	Mini Protean® TGX™ 4-15%, 15-well 15µl - 10gels	$102.08
Bio-Rad	456-1093	Mini Protean® TGX™ 4-20%, 10-well 30µl - 10gels	$102.08
Bio-Rad	456-1096	Mini Protean® TGX™ 4-20%,15-well 15µl - 10gels	$102.08
Bio-Rad	456-1023	Mini Protean® TGX™ 7.5%, 10-well 30µl - 10gels	$102.08
Bio-Rad	170-3932	Mini Trans-Blot Filter Paper - 50pk	$49.00
QIAGEN	217004	miRNeasy Mini Kit - 50 preps	$326.96
MilliporeSigma	M4287-2MG	Mitomycin C - 2mg	$74.98
New England Biolabs	R0198S	Mlu I - 1,000u	$47.50
New England Biolabs	T1020L	Monarch DNA Gel Extraction Kit - 250preps	$319.41
New England Biolabs	T1020S	Monarch DNA Gel Extraction Kit - 50preps	$69.50
New England Biolabs	T1030S	Monarch PCR & DNA Cleanup Kit (5 µg) - 50preps	$69.50
GE-Healthcare	NA931-1ML	Mouse IgG, HRP-Linked Whole Ab (sheep) -1ml	$207.18
ThermoFisher Scientific	N80080018	MuLV Reverse Transcriptase - 5,000u	$62.38
ThermoFisher Scientific	17502048	N-2 Supplement - 5ml	$73.05
New England Biolabs	R3193S	NcoI - HF - 1,000u	$45.99
New England Biolabs	R0111S	Nde I - 4,000u	$47.50
New England Biolabs	C2987H	NEB 5-Alpha Competent Cells - 20 x .05ml	$144.01
New England Biolabs	C2987I	NEB 5-alpha Competent E.coli - 6 X 0.2ml	$112.35
New England Biolabs	C2984H	NEB Turbo Competent E.coli - 20 x .05ml/tube	$190.76
ThermoFisher Scientific	21103049	Neurobasal-SFM - 500ml	$60.88
MilliporeSigma	N3910-24ML	Neutralization Solution B - 24ml	$53.81
New England Biolabs	R3131S	NheI-HF - 1,000u	$49.76
QIAGEN	30210	Ni-NTA Agarose - 25ml	$274.79
ThermoFisher Scientific	LC2000	Nitrocellulose Pre-Cut Membranes, .2µm - 20pk	$158.29
Bio-Rad	162-0115	Nitrocellulose, 0.45,33cm x 3M - 1roll	$285.00
Cell Signaling	5425S	Normal Goat Serum 10ml	$52.06
Quality Biological	114-055-101	Normal Saline - 500ml	$7.91
New England Biolabs	R3189L	Not I HF - 2500u	$216.40
New England Biolabs	R3189S	Not I HF - 500u	$53.53
ThermoFisher Scientific	LC5800	Novex Sharp Prestained Protein Standard- 2 x 250µl	$143.58
ThermoFisher Scientific	XP04205BOX	Novex WedgeWell 4-20% Tris-Glycine Mini Gels, 15-w	$82.62
ThermoFisher Scientific	NP0322BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 12 well -10gels	$133.93
ThermoFisher Scientific	NP0323BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 15 well-10gels	$133.93
ThermoFisher Scientific	NP0321BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 10 well -10gels	$133.93
ThermoFisher Scientific	NP0335BOX	NuPAGE® 4-12% Bis-Tris Gel 1.5 mm, 10 well-10gels	$133.93
ThermoFisher Scientific	NP0005	NuPAGE® Antioxidant - 15ml	$26.22
ThermoFisher Scientific	NP0007	NuPAGE® LDS Sample Buffer (4X) - 10ml	$14.05
ThermoFisher Scientific	NP0002	NuPAGE® MES SDS Running Buffer (20X) - 500ml	$71.18
ThermoFisher Scientific	NP0001	NuPAGE® MOPS SDS Running Buffer (20X) - 500ml	$71.18
ThermoFisher Scientific	NP0004	NuPAGE® Sample Reducing Agent (10X) - 250µl	$14.05
ThermoFisher Scientific	NP0006	NuPAGE® Transfer Buffer (20X) - 125ml	$22.48
ThermoFisher Scientific	NP00061	NuPAGE® Transfer Buffer (20X) - 1L	$151.73
ThermoFisher Scientific	18418012	Oligo(dT)12-18 Primer - 25µg	$72.82

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QIAGEN	205111	Omniscript RT Kit (50)	$225.32
ThermoFisher Scientific	C737303	One Shot® Stabl3 Competent E. coli - 20 x 50µl	$373.70
ThermoFisher Scientific	C404003	One Shot® TOP10 Competent E. coli - 20rxns	$347.43
New England Biolabs	M0480L	OneTaq® DNA Polymerase - 1000u	$123.66
ThermoFisher Scientific	31985088	Opti-MEM I - 10 x 500ml	$382.13
ThermoFisher Scientific	31985070	Opti-MEM I - 500ml	$44.14
ThermoFisher Scientific	12309019	Opti-Pro SFM - 1,000mL	$91.75
Bio-Rad	TCS-0803	Optical Flat 8-Cap Strips - 120 strips	$39.00
New England Biolabs	R0547S	Pac I - 250u	$50.52
ThermoFisher Scientific	26619	PageRuler™ Prestained Protein Ladder Plus,RTU-100	$112.00
MilliporeSigma	P6148-500G	Paraformaldehyde - 500g	$27.49
Quality Biological	114-058-101CS	PBS (1X) pH 7.4 w/o CaMg - 10 x 500ml	$74.98
Quality Biological	114-058-101	PBS (1X) pH 7.4 w/o CaMg - 500ml	$7.78
Corning Cellgro	21-040-CV	PBS (1X) w/o CaMg - 6 x 500ml	$32.93
ThermoFisher Scientific	10010049	PBS (1X) w/o CaMg, liquid - 10 x 500ml	$67.18
ThermoFisher Scientific	10010023	PBS (1X) w/o CaMg, liquid - 500ml	$8.02
Quality Biological	119-069-131CS	PBS 10X pH 7.4 - 10 x 1L	$227.59
Quality Biological	119-069-131	PBS 10X pH 7.4 - 1L	$24.19
Corning Cellgro	46-013-CM	PBS 10X pH 7.4 - 6 x 1L	$78.96
Promega	M7502	PCR Master Mix - 100rxns	$71.76
MilliporeSigma	P0781-100ML	Penicillin Streptomycin - 100ml	$10.19
ThermoFisher Scientific	15140122	Penicillin Streptomycin - 100ml	$10.67
ThermoFisher Scientific	15140163	Penicillin Streptomycin - 20 x 100ml	$211.94
Quality Biological	120-095-721	Penicillin Streptomycin - 4 x 100ml	$42.76
Corning Cellgro	30-001-CI	Penicillin Streptomycin - 6 x 100ml	$40.75
MilliporeSigma	P5318-5MG	Pepstatin A - 5mg	$57.70
GE-Healthcare	17-0891-01	Percoll® (Sterile) - 1L	$375.16
Agilent Technologies	600250	PfuTurbo® DNA Polymerase - 100u	$103.31
Agilent Technologies	600380	PfuUltra™ High-fidelity DNA Polymerase - 100u	$115.16
Agilent Technologies	600670	PfuUltra™ II Fusion HS DNA Polymerase - 40rxns	$95.69
Promega	A1360	pGEM®-T Easy Vector System I - 20rxn	$138.86
MilliporeSigma	P4557-400ML	Phenol- Tris Saturated, Equilibrated - 400ml	$178.23
MilliporeSigma	P3803-100ML	Phenol: Chloroform 25:24:1 - 100ml	$59.95
MilliporeSigma	P0044-1ML	Phosphatase Inhibitor Cocktail 3 - 1ml	$69.20
MilliporeSigma	P5726-1ML	Phosphatase Inhibitor Cocktail II - 1ml	$57.50
Cell Signaling	4060S	Phospho-Akt (Ser473) (D9E) XP(tm) Rabbit mAb-100µl	$275.92
Cell Signaling	9271S	Phospho-Akt (Ser473) Antibody - 100µl	$249.02
Cell Signaling	4370S	Phospho-p44/42 MAPK (Erk1/2) Rabbit mAb - 200µl	$275.92
MilliporeSigma	4906845001	PhosSTOP - 10 tablets	$117.20
MilliporeSigma	4906837001	PhosSTOP - 20 tablets	$228.94
ThermoFisher Scientific	F530L	Phusion High-Fidelity DNA - 500u	$270.37
New England Biolabs	M0530S	Phusion High-Fidelity DNA Polymerase - 100u	$79.92
New England Biolabs	M0530L	Phusion High-Fidelity DNA Polymerase - 500u	$319.70

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New England Biolabs	M0531L	Phusion High-Fidelity PCR Master Mix - 500rxns	$527.80
New England Biolabs	M0531S	Phusion High-Fidelity PCR Master Mix -100rxns	$131.95
New England Biolabs	M0535L	Phusion Hot Start Flex DNA Polymerase - 500u	$395.10
ThermoFisher Scientific	F530S	Phusion High-Fidelity DNA Polymerase- 100u	$67.44
ThermoFisher Scientific	11306016	PLATINUM® PCR Super Mix - 100rxns	$114.80
ThermoFisher Scientific	11708013	PLATINUM® PFX DNA polymerase - 100u	$134.19
ThermoFisher Scientific	10966018	PLATINUM® Taq DNA Polymerase - 100u	$101.15
ThermoFisher Scientific	10966034	PLATINUM® Taq DNA Polymerase - 500u	$374.67
ThermoFisher Scientific	11304011	PLATINUM® Taq DNA Polymerase High Fidelity - 100u	$167.65
New England Biolabs	R0560S	Pme I - 500u	$53.53
Cell Signaling	8553S	PMSF - 34.84mg	$16.49
MilliporeSigma	P6407-5MG	Poly-D-Lysine - 5mg	$32.41
MilliporeSigma	P4832-50ML	Poly-l-Lysine - 50ml	$80.55
QIAGEN	301107	PolyFect Transfection Reagent - 4 x 1ml	$539.34
ThermoFisher Scientific	4367659	Power SYBR® Green PCR Master Mix (1 x 5ml)-200rxns	$156.99
Bio-Rad	161-0373	Precision Plus All Blue Standards, 500µl - 50apps	$99.00
Bio-Rad	161-0374	Precision Plus Protein Dual Color Standards -500µl	$130.00
Bio-Rad	161-0375	Precision Plus Protein Kaleidoscope Standard-500µl	$140.00
GE-Healthcare	27-0843-01	PreScission Protease - 500 units	$320.64
ThermoFisher Scientific	P36930	ProLong Gold Antifade Reagent - 10ml	$161.10
ThermoFisher Scientific	P36931	Prolong Gold Antifade Reagent w/DAPI - 10ml	$168.59
Cell Signaling	9071S	ProLong(R) Gold Antifade Reagent - 10ml	$141.43
Cell Signaling	8961S	ProLong(R) Gold Antifade Reagent with DAPI - 10ml	$150.98
MilliporeSigma	P2714-1BTL	Protease Inhibitor - 1 bottle	$41.99
MilliporeSigma	P8340-1ML	Protease Inhibitor Cocktail - 1ml	$74.00
MilliporeSigma	P8340-5ML	Protease Inhibitor Cocktail - 5ml	$139.76
Cell Signaling	5872S	Protease/Phosphatase Inhibitor Cocktail (100X)-1ml	$213.45
Bio-Rad	500-0006	Protein Assay Dye Reagent - 450ml	$125.00
GE-Healthcare	17-0618-01	Protein G Sepharose™ 4 Fast Flow - 5ml	$468.68
MilliporeSigma	3115879001	Proteinase K - 100mg	$90.16
ThermoFisher Scientific	25530015	Proteinase K - 100mg	$97.56
ThermoFisher Scientific	EO0491	Proteinase K - 1ml	$47.20
QIAGEN	19131	Proteinase K - 2ml	$85.42
MilliporeSigma	3115828001	Proteinase K Solution, PCR Grade - 5ml	$143.52
New England Biolabs	P8107S	Proteinase K, Molecular Biology Grade - 2ml	$55.80
New England Biolabs	R3140S	Pst I-HF -10,000u	$47.50
ThermoFisher Scientific	K210016	PureLink® HiPure Filter Maxi - 10preps	$197.12
ThermoFisher Scientific	K210014	PureLink® HiPure Plasmid Midiprep Kit - 25preps	$233.54
ThermoFisher Scientific	K210010	PureLink® Quick Plasmid Miniprep Kit - 50preps	$61.75
MilliporeSigma	P8833-25MG	Puromycin - 25mg	$66.06
New England Biolabs	M0492S	Q5 High-Fidelity 2X Master Mix - 100rxns	$129.69
New England Biolabs	M0491S	Q5 High-Fidelity DNA Polymerase - 100u	$79.17
New England Biolabs	M0494S	Q5 Hot Start High-Fidelity 2X Master Mix - 100rxns	$150.80

Supplier	Catalog #	Description	Core Store Price
New England Biolabs	M0493S	Q5 Hot Start High-Fidelity DNA Polymerase - 100u	$97.27
New England Biolabs	E0554S	Q5 Site-Directed Mutagenesis Kit - 10rxns	$141.75
QIAGEN	51104	QIAamp DNA Blood Mini Kit (50)	$139.73
QIAGEN	51304	QIAamp DNA Mini Kit (50)	$150.90
QIAGEN	20021	QIAEX II Gel Extraction Kit (150)	$167.67
QIAGEN	12162	QIAGEN Plasmid Maxi Kit (10)	$224.49
QIAGEN	12163	QIAGEN Plasmid Maxi Kit (25)	$517.91
QIAGEN	12143	QIAGEN Plasmid Midi Kit (25)	$258.96
QIAGEN	12123	QIAGEN Plasmid Mini Kit (25)	$193.75
QIAGEN	27115	QIAprep Spin Miniprep Columns	$85.33
QIAGEN	27106	QIAprep Spin Miniprep Kit (250)	$360.49
QIAGEN	27104	QIAprep Spin Miniprep Kit (50)	$85.42
QIAGEN	28706	QIAquick Gel Extraction Kit (250)	$509.53
QIAGEN	28704	QIAquick Gel Extraction Kit (50)	$107.12
QIAGEN	28106	QIAquick PCR Purification Kit (250)	$505.80
QIAGEN	28104	QIAquick PCR Purification Kit (50)	$106.19
QIAGEN	79656	QIAshredder (250)	$340.93
QIAGEN	79654	QIAshredder (50)	$78.90
ThermoFisher Scientific	Q32851	Quant-it DSDNA HS Assay Kit	$85.34
QIAGEN	205313	QuantiTect Rev. Transcription Kit (200)	$1,034.58
QIAGEN	205311	QuantiTect Rev. Transcription Kit (50)	$302.72
QIAGEN	204143	QuantiTect SYBR Green PCR Kit (200)	$371.52
ThermoFisher Scientific	Q32856	Qubit assay tubes set - 500sets	$73.52
New England Biolabs	M2200S	Quick Ligation Kit - 30rxns	$73.14
Agilent Technologies	210518	QuikChange Lightning - 10rxns	$226.10
Agilent Technologies	200521	QuikChange® II XL site-directed mutagenesis kit	$242.18
GE-Healthcare	GENA934-1ML	Rabbit IgG, HRP-linked Ab (donkey) - 1ml	$189.75
MilliporeSigma	F7425-.2MG	Rabbit-Anti flag - 0.2mg	$287.50
GE-Healthcare	RPN800E	Rainbow™ Molecular Weight Marker IMPROVED-250µl	$102.89
ThermoFisher Scientific	N8080127	Random Hexamers (50µm) - 1 kit	$59.61
Promega	C1181	Random Primers - 20µg	$38.12
Promega	N2511	Recombinant RNasin® Ribonuclease Inhibitor-2,500u	$93.38
ThermoFisher Scientific	12648010	Recovery Cell Culture Medium - 50ml	$117.08
MilliporeSigma	R4775-1.2ML	REDExtract-N-Amp™ PCR ReadyMix™ - 1.2ml	$95.80
MilliporeSigma	XNAT-100RXN	REDExtract-N-Amp™ Tissue PCR Kit - 100rxn	$199.55
MilliporeSigma	R2523-100RXN	RedTaq Ready Mix PCR Mix - 100rxns	$58.65
ThermoFisher Scientific	46430	Restore PLUS western Blot Stripping Buffer	$134.89
ThermoFisher Scientific	21059	Restore Western Blot Stripping Buffer - 500ml	$133.00
MilliporeSigma	R0278-50ML	Ripa Buffer - 50ml	$45.14
Cell Signaling	9806S	Ripa Buffer (10x) - 15ml	$52.06
MilliporeSigma	R0901-100ML	RNAlater - 100ml	$111.44
QIAGEN	76104	RNAlater RNA Stabilization Reagent - 50ml	$74.15
QIAGEN	19101	RNase A - 17,500u	$196.55

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ThermoFisher Scientific	EN0531	RNase A (DNase & protease free)-1ml(10mg/ml)	$40.60
New England Biolabs	M0297S	RNase H - 250u	$50.52
New England Biolabs	M0307S	RNase Inhibitor - 2,000u	$58.81
ThermoFisher Scientific	N8080119	RNase Inhibitor - 2,000u	$65.64
QIAGEN	79254	RNase-Free DNase Set (50)	$96.88
ThermoFisher Scientific	10777019	RNaseOUT™ - 5000u	$143.00
MilliporeSigma	R2020-250ML	RNaseZap - 250ml	$45.17
Promega	N2615	RNasin® Plus RNase Inhibitor - 10,000u	$273.70
Promega	N2115	RNasin® Ribonuclease Inhibitor - 10,000	$401.70
QIAGEN	74804	RNeasy Lipid Tissue Mini Kit (50)	$359.56
QIAGEN	74106	RNeasy Mini Kit (250)	$1,227.72
QIAGEN	74104	RNeasy Mini Kit (50)	$280.38
QIAGEN	74134	RNeasy Plus Mini Kit (50)	$319.50
MilliporeSigma	R8758-500ML	RPMI 1640 - 500ml	$4.96
ThermoFisher Scientific	11875119	RPMI 1640 (1X) w/ L-Glut - 10 x 500ml	$79.61
ThermoFisher Scientific	11875093	RPMI 1640 (1X) w/ L-Glut - 500ml	$8.41
ThermoFisher Scientific	11875135	RPMI 1640 (1X) w/ L-Glut - 6 x 1000ml	$80.45
ThermoFisher Scientific	61870036	RPMI 1640 w/ Glutamax - 500ml	$14.87
Corning Cellgro	10-040-CV	RPMI 1640 w/L-glut - 6 x 500ml	$32.93
Quality Biological	112-301-101	RPMI 1640 w/ Glutamine XL - 500ml	$8.66
Quality Biological	112-301-101CS	RPMI 1640 w/ L-Glutamine XL - 10 x 500ml	$77.87
QIAGEN	330401	RT2 First Strand cDNA Kit - 12rxns (20µl each)	$208.66
New England Biolabs	R3156S	Sac I HF - 2,000u	$43.73
New England Biolabs	R3138S	Sal I - HF - 2,000u	$45.99
ThermoFisher Scientific	LC5925	SeeBlue® Plus 2 Pre-Stained Standard - 500µl	$146.11
Bio-Rad	223-9955	Semi-Micro Disposable Cuvettes, 1.5ml - 100pk	$12.50
Promega	V5111	Sequencing Grade Modified Trypsin - 100µg	$82.98
ThermoFisher Scientific	LC6060	SimplyBlue™ SafeStain - 1L	$136.74
Quality Biological	340-031-671	SOC Medium - 10 x 10ml	$36.28
ThermoFisher Scientific	25080094	Sodium Bicarbonate Soln, 7.5% (w/v) - 100ml	$9.98
Quality Biological	351-036-101	Sodium Chloride, 5M - 500ml	$11.20
MilliporeSigma	S8636-100ML	Sodium Pyruvate - 100ml	$6.49
ThermoFisher Scientific	11360070	Sodium Pyruvate Solution - 100ml	$9.46
New England Biolabs	R3133S	Spel HF - 500u	$49.76
New England Biolabs	R3182S	SphI HF - 500u	$49.76
ThermoFisher Scientific	A1110501	StemPro Accutase Cell Dissociation Reagent - 100ml	$40.08
ThermoFisher Scientific	18265017	SUB Efficiency DH5 Alpha™ Comp Cells - 2ml	$56.26
New England Biolabs	C2988J	Subcloning Efficiency 5-alpha Comp cells- 6 x0.4ml	$52.03
MilliporeSigma	S5016-500G	Sucrose ACS Reagent - 500g	$15.51
ThermoFisher Scientific	18064014	SuperScript™ II Reverse Transcriptase - 10,000u	$284.73
ThermoFisher Scientific	18080044	SuperScript™ III - 10,000u	$299.85
ThermoFisher Scientific	18080051	SuperScript™ III First Strand Syntesis Kit	$415.85
ThermoFisher Scientific	18080093	SuperScript™ III Rev Transcriptase - 2,000 u	$89.91

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ThermoFisher Scientific	34075	SuperSignal West Dura Extended Duration Substrate	$312.55
ThermoFisher Scientific	34080	SuperSignal West Pico Chemiluminescent Substrate	$217.15
ThermoFisher Scientific	34095	SuperSignal West Femto Maximum Sensitivity Substrtrate	$334.39
ThermoFisher Scientific	S33102	SYBR Safe DNA Gel Stain - 400µl	$66.03
ThermoFisher Scientific	4309155	SYBR® Green PCR Master Mix (1x5ml) - 200rxns	$181.52
New England Biolabs	M0202L	T4 DNA Ligase - 100,000u	$193.02
New England Biolabs	M0202S	T4 DNA Ligase - 20,000u	$48.26
New England Biolabs	M0202T	T4 DNA Ligase (2,000,000u/ml) - 20,000u	$48.26
New England Biolabs	B0202S	T4 DNA Ligase Reaction Buffer - 6.0 ml	$15.83
New England Biolabs	M0203S	T4 DNA Polymerase - 150u	$49.76
New England Biolabs	M0201S	T4 Polynucleotide Kinase - 500u	$42.22
New England Biolabs	E2050S	T7 Quick High Yield RNA synthesis kit	$200.56
ThermoFisher Scientific	15558026	TAE Buffer (10X) - 4L	$99.92
MilliporeSigma	T5648-1G	Tamoxifen free base - 1g	$205.00
QIAGEN	201205	Taq DNA Polymerase - 1000u	$380.12
QIAGEN	201203	Taq DNA Polymerase - 250u	$110.08
ThermoFisher Scientific	18038042	Taq DNA Polymerase - 500u	$83.89
New England Biolabs	M0273S	Taq DNA Polymerase with Standard Taq Buffer- 400u	$46.75
New England Biolabs	M0267L	Taq DNA Polymerase with ThermoPol Buffer - 2,000	$183.98
New England Biolabs	M0267S	Taq DNA Polymerase with ThermoPol Buffer - 400u	$45.99
ThermoFisher Scientific	10342020	Taq DNA Polymerase, Recombinant - 500u	$80.75
ThermoFisher Scientific	4440038	TaqMan® Universal Master Mix II with UNG 1 Pack	$298.59
ThermoFisher Scientific	4440040	TaqMan® universal master mix II, no ung -200rxns	$280.22
ThermoFisher Scientific	4352042	TaqMan® Fast Universal PCR Master Mix (2X)-250rxns	$180.24
ThermoFisher Scientific	4369016	TaqMan® Gene Expression Master Mix(1x5ml)-200rxns	$281.58
ThermoFisher Scientific	4304437	TaqMan® Universal PCR Master Mix(1x5ml)-200rxns	$355.04
Quality Biological	351-001-131	TBE Buffer (10X) - 1L	$24.43
Corning Cellgro	46-012-CM	TBS (10X) - 6 x 1L	$72.82
Quality Biological	351-086-101CS	TBS pH 7.4 (10X) - 10 x 500ml	$163.53
Quality Biological	351-086-101	TBS pH 7.4 (10X) - 500ml	$17.21
Bio-Rad	145-0011	TC10 Sample Slides - 30 Slides per Box	$52.00
Quality Biological	351-011-131	TE pH 8.0 – 1L	$21.32
Bio-Rad	161-0800	Temed - 5ml	$17.00
Bio-Rad	170-4085	Thick Blot Paper, 9.5x15.2 cm - 50 sheets	$52.00
ThermoFisher Scientific	K450001SC	TOPO TA Cloning®, top 10 - 20 rxns	$467.36
ThermoFisher Scientific	10488085	TrackIt™ 1 Kb Plus DNA Ladder - 100apps	$82.21
MilliporeSigma	T9039-10PAK	Tris Buffered Saline, ph 8.0 - 10pk	$21.85
Quality Biological	351-006-101	Tris-HCL 1M pH 7.5 - 500ml	$14.96
Quality Biological	351-007-101	Tris-HCL 1M pH 8.0 - 500ml	$14.96
MilliporeSigma	T9284-100ML	Triton X 100 - 100ml	$58.83
ThermoFisher Scientific	15596026	TRIZOL® Reagent - 100ml	$125.13
ThermoFisher Scientific	15596018	TRIZOL® Reagent - 200ml	$225.36
Corning Cellgro	25-900-CI	Trypan Blue Solution, 0.4% - 1 x 100ml	$11.47

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	15250061	Trypan Blue Stain -100ml	$15.26
ThermoFisher Scientific	12604039	TrypLE™ Express - 20 X 100ml	$239.60
ThermoFisher Scientific	12604013	TrypLE™ Express - 100ml	$16.37
ThermoFisher Scientific	12605010	TrypLE™ Express w/Phenol Red - 100ml	$16.64
Quality Biological	118-093-721	Trypsin 0.25% EDTA 0.02% - 4 x 100ml	$32.19
ThermoFisher Scientific	25300120	Trypsin-EDTA .05% - 20 x 100ml	$133.69
Corning Cellgro	25-052-CI	Trypsin-EDTA .05% - 6 x 100ml	$36.24
ThermoFisher Scientific	25300054	Trypsin-EDTA .05% (1X) - 100ml	$11.73
Corning Cellgro	25-053-CI	Trypsin-EDTA 0.25 (1X) w/o CaMg - 6 x 100ml	$36.24
MilliporeSigma	T4049-100ML	Trypsin-EDTA 0.25 % - 100ml	$10.95
ThermoFisher Scientific	25200114	Trypsin-EDTA 0.25% - 20 x 100ml	$204.18
ThermoFisher Scientific	25200056	Trypsin-EDTA 0.25% (1X) - 100ml	$11.17
ThermoFisher Scientific	15400054	Trypsin-EDTA 0.5% (10X) w/o phenol red - 100ml	$29.30
ThermoFisher Scientific	AM1907	TURBO DNA-free Kit - 50rxns	$103.96
MilliporeSigma	P7949-100ML	Tween 20 - 100ml	$31.20
ThermoFisher Scientific	16500500	UltraPure™ Agarose - 500g	$376.54
Quality Biological	351-029-721	Water- Molecular Biology Grade - 4 x 100ml	$32.88
Quality Biological	351-029-131	Water- Molecular Biology Grade- 1L	$12.47
Corning Cellgro	46-000-CI	Water- Molecular Grade - 6 x 100ml	$29.29
Promega	P1193	Water- Nuclease-Free - 50ml (2 x 25ml)	$46.92
Quality Biological	118-162-131	Water-Cell Culture Grade (Ultra Pure) -1L	$17.72
Quality Biological	118-162-101	Water-Cell Culture Grade Water - 500ml	$9.29
Quality Biological	351-068-131CS	Water-DEPC Treated Water - 10 x 1L	$201.68
Quality Biological	351-068-131	Water-DEPC Treated Water - 1L	$22.41
Quality Biological	351-068-721	Water-DEPC Treated Water - 4 x 100ml	$34.80
ThermoFisher Scientific	15230204	Water-Distilled Water - 10 x 500ml	$68.74
ThermoFisher Scientific	15230162	Water-Distilled Water - 500ml	$8.37
Corning Cellgro	25-055-CV	Water-Distilled Water - 6 x 500ml	$32.93
ThermoFisher Scientific	10977015	Water-Distilled Water (Ultrapure) - 500ml	$19.95
Quality Biological	351-161-671	Water-PCR Qualified Pure - 10 x 10ml	$95.94
Corning Cellgro	46-101-RF	X-Gal 1 x 1g	$163.01
MilliporeSigma	6366244001	X-tremeGENE HP DNA Transfection Reagent - .4ml	$182.16
New England Biolabs	R0145S	Xba I - 3,000u	$51.27
New England Biolabs	R0146S	Xho I - 5,000u	$51.27
Agilent Technologies	200315	XL10-Gold® Competent Cells - 10 x 0.1ml	$215.09
New England Biolabs	R0180S	Xma I - 500u	$49.76
ThermoFisher Scientific	R25001	Zeocin™ - 8 x 1.25ml	$206.12

Supplier	Catalog #	Description	Core Store Price

Agilent Technologies

Special orders are available from the Genomics Division. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Agilent Technologies	230132	BL21-Gold (DE3) Competent Cells - 5 x 0.2ml	$177.83
Agilent Technologies	600675	Herculase® II Fusion DNA Polymerase - 40rxns	$47.88
Agilent Technologies	600250	PfuTurbo® DNA Polymerase - 100u	$103.31
Agilent Technologies	600380	PfuUltra™ High-fidelity DNA Polymerase - 100u	$115.16
Agilent Technologies	600670	PfuUltra™ II Fusion HS DNA Polymerase - 40rxns	$95.69
Agilent Technologies	210518	QuikChange Lightning - 10rxns	$226.10
Agilent Technologies	200521	QuikChange® II XL site-directed mutagenesis kit	$242.18
Agilent Technologies	200315	XL10-Gold® Competent Cells - 10 x 0.1ml	$215.09

Bio-Rad

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Bio-Rad	170-8352	100 bp, EZ Load Molecular Ruler - 100 lanes	$120.00
Bio-Rad	170-6435	10X Tris Buffered Saline - 1L	$41.00
Bio-Rad	161-0734	10x Tris/Glycine - 1L	$28.00
Bio-Rad	161-0771	10X Tris/Glycine - 5L	$96.00
Bio-Rad	161-0772	10X Tris/Glycine/SDS - 5L	$96.00
Bio-Rad	161-0732	10x Tris/Glycine/SDS Buffer - 1L	$28.00
Bio-Rad	161-0156	30% Acryl/Bis Solution 29:1 - 500ml	$60.00
Bio-Rad	161-0158	30% Acryl/Bis Solution 37.5:1 - 500ml	$60.00
Bio-Rad	161-0144	40% Acryl/Bis Solution 19:1 - 500ml	$73.00
Bio-Rad	161-0148	40% Acryl/Bis Solution 37.5:1 - 500ml	$73.00
Bio-Rad	161-0747	4x Laemmli Sample Buffer - 10ml	$15.00
Bio-Rad	223-9441	96 - Well 0.2 ml PCR Plates - 25pk	$225.00
Bio-Rad	161-0700	Ammonium Persulfate - 10g	$14.00
Bio-Rad	170-3965	Blot Paper, Extra Thick, 7.5 x 10cm	$57.00
Bio-Rad	170-6404	Blotting Grade Blocker-NFDM - 300g	$48.00
Bio-Rad	170-5060	Clarity Western ECL Substrate - 200ml	$126.67
Bio-Rad	170-5061	Clarity Western ECL Substrate - 500ml	$239.77
Bio-Rad	345-0027	Criterion™ Gel, Tris-HCl 4-15% - 12-2wells	$15.00
Bio-Rad	345-0033	Criterion™ Gel, Tris-HCl 4-20%, 18 wells - 1gel	$15.00
Bio-Rad	345-0034	Criterion™ Gel, Tris-HCl, 4-20%, 26 wells - 1gel	$15.00
Bio-Rad	567-1034	Criterion™ TGX™ 10%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1084	Criterion™ TGX™ 4-15%, 18 well 30µl - 1gel	$15.00
Bio-Rad	567-1024	Criterion™ TGX™ 7.5%, 18 well 30µl - 1gel	$15.00
Bio-Rad	165-2089	Gene Pulser® Cuvette, 0.1cm - 50pk	$185.00
Bio-Rad	161-0718	Glycine - 1kg	$54.00
Bio-Rad	HSP-9601	Hard-shell 96 well PCR plates	$213.15
Bio-Rad	162-0174	ImmunBlot PVDF Membrane - 10pk	$88.00
Bio-Rad	162-0177	ImmunBlot PVDF, 26cm x 3.3m - 1 roll	$335.00
Bio-Rad	170-8880	iQ SYBR Green Supermix - 100x50µl	$200.97

Supplier	Catalog #	Description	Core Store Price
Bio-Rad	170-8882	iQ SYBR Green Supermix - 500x50µL	$866.40
Bio-Rad	170-8841	iScript™ RT Supermix - 100rxns	$500.00
Bio-Rad	170-8891	iScript™ cDNA Synthesis Kit - 100rxns	$440.00
Bio-Rad	170-8890	iScript™ cDNA Synthesis Kit - 25rxns	$150.00
Bio-Rad	172-5122	iTaq Univeral SYBR Green SMX - 10ml	$419.46
Bio-Rad	172-5121	iTaq Univeral SYBR Green SMX - 5ml	$219.01
Bio-Rad	161-0737	Laemmli Sample Buffer - 30ml	$14.00
Bio-Rad	MSB-1001	Microseal B Seals - 100pk	$147.90
Bio-Rad	170-4157	Midi PVDF Transfer pack - 10pk	$188.85
Bio-Rad	456-1034	Mini Protean® TGX™ 10% 10well 50µl- 10gels	$102.08
Bio-Rad	456-1033	Mini Protean® TGX™ 10%, 10-well 30µL-10gels	$102.08
Bio-Rad	456-1083	Mini Protean® TGX™ 4-15%, 10-well 30ul-10gels	$102.08
Bio-Rad	456-1084	Mini Protean® TGX™ 4-15%, 10well 50µl - 10gels	$102.08
Bio-Rad	456-1086	Mini Protean® TGX™ 4-15%, 15-well 15µl - 10gels	$102.08
Bio-Rad	456-1093	Mini Protean® TGX™ 4-20%, 10-well 30µl - 10gels	$102.08
Bio-Rad	456-1096	Mini Protean® TGX™ 4-20%,15-well 15µl - 10gels	$102.08
Bio-Rad	456-1023	Mini Protean® TGX™ 7.5%, 10-well 30µl - 10gels	$102.08
Bio-Rad	170-3932	Mini Trans-Blot Filter Paper - 50pk	$49.00
Bio-Rad	162-0115	Nitrocellulose, 0.45,33cm x 3M - 1roll	$285.00
Bio-Rad	TCS-0803	Optical Flat 8-Cap Strips - 120 strips	$39.00
Bio-Rad	161-0373	Precision Plus All Blue Standards, 500µl - 50apps	$99.00
Bio-Rad	161-0374	Precision Plus Protein Dual Color Standards -500µl	$130.00
Bio-Rad	161-0375	Precision Plus Protein Kaleidoscope Standard-500µl	$140.00
Bio-Rad	500-0006	Protein Assay Dye Reagent - 450ml	$125.00
Bio-Rad	223-9955	Semi-Micro Disposable Cuvettes, 1.5ml - 100pk	$12.50
Bio-Rad	145-0011	TC10 Sample Slides - 30 Slides per Box	$52.00
Bio-Rad	161-0800	Temed - 5ml	$17.00
Bio-Rad	170-4085	Thick Blot Paper, 9.5x15.2 cm - 50 sheets	$52.00

Cell Signaling

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Cell Signaling	9272S	Akt Antibody - 100µl	$213.45
Cell Signaling	7076S	Anti-mouse IgG, HRP-linked Antibody - 1ml	$114.53
Cell Signaling	7074S	Anti-rabbit IgG, HRP-linked Antibody - 1ml	$114.53
Cell Signaling	9998S	BSA - 50g	$177.01
Cell Signaling	9803S	Cell Lysis Buffer (10X) - 15ml	$52.06
Cell Signaling	9661S	Cleaved Caspase-3 (Asp175) Antibody - 100µl	$249.02
Cell Signaling	5425S	Normal Goat Serum 10ml	$52.06
Cell Signaling	4060S	Phospho-Akt (Ser473) (D9E) XP(tm) Rabbit mAb-100µl	$275.92
Cell Signaling	9271S	Phospho-Akt (Ser473) Antibody - 100µl	$249.02
Cell Signaling	4370S	Phospho-p44/42 MAPK (Erk1/2) Rabbit mAb - 200µl	$275.92
Cell Signaling	8553S	PMSF - 34.84mg	$16.49

Supplier	Catalog #	Description	Core Store Price
Cell Signaling	9071S	ProLong(R) Gold Antifade Reagent - 10ml	$141.43
Cell Signaling	8961S	ProLong(R) Gold Antifade Reagent with DAPI - 10ml	$150.98
Cell Signaling	5872S	Protease/Phosphatase Inhibitor Cocktail (100X)-1ml	$213.45
Cell Signaling	9806S	Ripa Buffer (10x) - 15ml	$52.06

Corning Cellgro

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Corning Cellgro	61-238-RH	Ampicillin, Sodium Salt Powder - 10g	$45.85
Corning Cellgro	30-100-RB	Blasticidin S HCl, Powder - 50mg	$98.82
Corning Cellgro	25-055-CV	Distilled Water - 6 x 500ml	$32.93
Corning Cellgro	10-014-CV	DMEM - 1 gm/L glucose - 6 x 500ml	$32.93
Corning Cellgro	10-013-CV	DMEM - 4.5 gm/L glucose - 6 x 500ml	$32.93
Corning Cellgro	10-017-CV	DMEM w/ L-glutamine - 6 x 500ml	$32.93
Corning Cellgro	10-092-CV	DMEM/F-12 - 50/50 Mix - 6 x 500ml	$52.71
Corning Cellgro	15-090-CV	DMEM/F-12 - 50/50 Mix w/o L-Glutamine - 6 x 500ml	$47.12
Corning Cellgro	25-950-CQC	DMSO - 250ml	$56.04
Corning Cellgro	21-031-CV	DPBS (1X) w/o CaMg - 6 x 500ml	$32.93
Corning Cellgro	46-034-CI	EDTA .5 M, pH 8.0 - 100ml	$15.29
Corning Cellgro	35-011-CV	Fetal Bovine Serum, Heat Inactivated - 500ml	Market Price
Corning Cellgro	35-010-CV	Fetal Bovine Serum, USDA - 500ml	Market Price
Corning Cellgro	61-234-RF	G418 - 1g	$71.08
Corning Cellgro	61-234-RG	G418 - 5g	$201.23
Corning Cellgro	30-234-CR	G418 Sulfate Solution - 20ml	$91.69
Corning Cellgro	21-021-CV	HBSS (1X) w/o CaMg - 6 x 500ml	$32.93
Corning Cellgro	21-022-CV	HBSS w/o CaMg & phenol red - 6 x 500ml	$33.59
Corning Cellgro	30-240-CR	Hygromycin B Solution - 1 x 20ml	$127.37
Corning Cellgro	46-102-RF	IPTG - 1g	$25.25
Corning Cellgro	25-800-CR	ITS 100x Solution - 10ml	$34.38
Corning Cellgro	25-005-CI	L-Glutamine - 6 x 100ml	$46.11
Corning Cellgro	25-072-CI	Lymphocyte separation medium - 1 x 100ml	$12.74
Corning Cellgro	10-050-CV	McCoy's 5A w/L-Glut - 6 x 500ml	$58.59
Corning Cellgro	10-010-CV	MEM w/ Earle's salts & L-glut. (1X) - 6 x 500ml	$32.93
Corning Cellgro	21-040-CV	PBS (1X) w/o CaMg - 6 x 500ml	$32.93
Corning Cellgro	46-013-CM	PBS 10X pH 7.4 - 6 x 1L	$78.96
Corning Cellgro	30-001-CI	Penicillin Streptomycin - 6 x 100ml	$40.75
Corning Cellgro	10-040-CV	RPMI 1640 w/L-glut - 6 x 500ml	$32.93
Corning Cellgro	46-012-CM	TBS (10X) - 6 x 1L	$72.82
Corning Cellgro	25-900-CI	Trypan Blue Solution, 0.4% - 1 x 100ml	$11.47
Corning Cellgro	25-052-CI	Trypsin-EDTA .05% - 6 x 100ml	$36.24
Corning Cellgro	25-053-CI	Trypsin-EDTA 0.25 (1X) w/o CaMg - 6 x 100ml	$36.24
Corning Cellgro	46-000-CI	Water, Molecular Grade - 6 x 100ml	$29.29
Corning Cellgro	46-101-RF	X-Gal 1 x 1g	$163.01

Supplier	Catalog #	Description	Core Store Price

Faster Better Media

Some special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Faster Better Media	SB20-1	20X SB low conductive medium - 1L	$33.00

GE Healthcare

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

GE-Healthcare	RPN2232	ECL Prime Western Blotting rgt, For 1000 cm2	$128.92
GE-Healthcare	RPN2106	ECL Western Blotting Detection Rgts - 2 x 250ml	$167.04
GE-Healthcare	17-1440-03	Ficoll-Paque™ PLUS - 6 x 500ml	$556.24
GE-Healthcare	17-1440-02	Ficoll-Paque™ PLUS- 6 x 100ml	$162.51
GE-Healthcare	17-0756-01	Glutathione Sepharose™ - 10ml	$243.01
GE-Healthcare	28-9068-35	Hyperfilm ECL 5x7in - 50 Sheets	$143.84
GE-Healthcare	28-9068-39	Hyperfilm ECL 8x10in - 100 Sheets	$286.52
GE-Healthcare	28-9068-38	Hyperfilm ECL 8x10in - 50 Sheets	$170.52
GE-Healthcare	NA931-1ML	Mouse IgG, HRP-Linked Whole Ab (sheep) -1ml	$207.18
GE-Healthcare	17-0891-01	Percoll® (Sterile) - 1L	$375.16
GE-Healthcare	27-0843-01	PreScission Protease - 500 units	$320.64
GE-Healthcare	17-0618-01	Protein G Sepharose™ 4 Fast Flow - 5ml	$468.68
GE-Healthcare	NA934-1ML	Rabbit IgG, HRP-linked Ab (donkey) - 1ml	$189.75
GE-Healthcare	RPN800E	Rainbow™ Molecular Weight Marker IMPROVED-250µl	$102.89

Hyclone

Some special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Hyclone	SH30071.03	Fetal Bovine Serum, Characterized - 500ml	Market Price
Hyclone	SH30070.03	Fetal Bovine Serum, Defined - 500ml	Market Price

Lonza

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

MilliporeSigma

Some special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing

MilliporeSigma	A6964-100ML	Accutase - 100ml	$29.69
MilliporeSigma	A6013-500G	Agarose, Type I - 500g	$255.96
MilliporeSigma	A9647-100G	Albumin Fraction V - 100g	$180.77
MilliporeSigma	A2942-20ML	Amphotericin B - 20ml	$14.15
MilliporeSigma	A9518-5G	Ampicillin, Sodium Salt - 5g	$24.38
MilliporeSigma	A2220-1ML	Anti-Flag M2 AB Agarose - 1ml	$436.50
MilliporeSigma	A5955-100ML	Antibiotic Antimycotic (100X) - 100ml	$29.74
MilliporeSigma	A7699-1G	ATP (Disodium Salt) - 1g	$75.00
MilliporeSigma	C1389-1G	Carbenicillin - 1g	$74.67
MilliporeSigma	11836153001	cOmplete Mini - 25 tablets	$127.51
MilliporeSigma	11873580001	cOmplete EDTA-free - 20 tablets	$277.87
MilliporeSigma	11836170001	cOmplete Mini, EDTA-free - 25 tablets	$128.40

Supplier	Catalog #	Description	Core Store Price
MilliporeSigma	11697498001	cOmplete Protease Inhibitor - 20 tablets	$272.84
MilliporeSigma	10236276001	DAPI (staining reagent) - 10mg	$68.08
MilliporeSigma	D5796-6X500ML	DMEM high w/ glucose - 6 x 500ml	$28.75
MilliporeSigma	D5796-500ML	DMEM, high, w/L-Glutamine - 500ml	$4.96
MilliporeSigma	D2650-100ML	DMSO - 100ml	$135.82
MilliporeSigma	D2650-5X5ML	DMSO - 5 x 5ml	$45.61
MilliporeSigma	DN25-100MG	DNase I - 100mg	$58.71
MilliporeSigma	10104159001	DNase I (Grade II) - 100mg	$57.96
MilliporeSigma	D7295-.5ML	dNTP Mix 10mM, 5µmol each - .5ml	$45.01
MilliporeSigma	D9663-10ML	Donkey serum - 10ml	$29.60
MilliporeSigma	D9891-1G	Doxycycline - 1g	$43.70
MilliporeSigma	D8537-500ML	DPBS (1X) w/o CaMg- 500ml	$4.96
MilliporeSigma	D9163-5G	DTT - 5g	$56.35
MilliporeSigma	E7889-100ML	EDTA Disodium Salt - 100ml	$50.81
MilliporeSigma	E9644-.2MG	Epidermal Growth Factor (EGF)Human - 0.2mg	$179.01
MilliporeSigma	E1510-10ML	Ethidium Bromide - 10ml	$55.74
MilliporeSigma	F4135-500ML	Fetal Bovine Serum, Heat Inactivated - 500ml	Market Price
MilliporeSigma	F6178-500ML	Fetal Bovine Serum, Qualified - 500ml	Market Price
MilliporeSigma	F0291-25UG	Fibroblast growth factor - 25µg	$219.88
MilliporeSigma	F2006-1MG	Fibronectin - 1mg	$96.66
MilliporeSigma	F1141-2MG	Fibronectin - 2mg	$176.40
MilliporeSigma	F9037-100ML	Formamide - 100ml	$32.20
MilliporeSigma	F7503-1L	Formamide - 1L	$86.47
MilliporeSigma	G6279-1L	Glycerol, SigmaUltra - 1L	$90.67
MilliporeSigma	10901393001	Glycogen - 20mg	$128.48
MilliporeSigma	G9023-10ML	Goat Serum - 10ml	$29.60
MilliporeSigma	H9394-500ML	HBSS w/o CaMg - 500ml	$4.96
MilliporeSigma	H4034-100G	Hepes - 100g	$58.65
MilliporeSigma	H8889-500ML	Histopaque®-1077 - 500ml	$180.16
MilliporeSigma	H1009-100ML	Hydrogen Peroxide - 100ml	$40.30
MilliporeSigma	I9516-500ML	Isopropanol - 500ml	$50.52
MilliporeSigma	K0879-50MG	Kanamycin - 50mg	$19.85
MilliporeSigma	L2020-1MG	Laminin - 1mg	$94.19
MilliporeSigma	L2542-500ML	LB Broth - 500ml	$29.85
MilliporeSigma	5401020001	Liberase TL Research Grade - 10mg	$55.00
MilliporeSigma	M7145-100ML	MEM NEAA (100X) - 100ml	$16.47
MilliporeSigma	M4287-2MG	Mitomycin C - 2mg	$74.98
MilliporeSigma	N3910-24ML	Neutralization Solution B - 24ml	$53.81
MilliporeSigma	P6148-500G	Paraformaldehyde - 500g	$27.49
MilliporeSigma	P0781-100ML	Penicillin Streptomycin - 100ml	$10.19
MilliporeSigma	P5318-5MG	Pepstatin A - 5mg	$57.70
MilliporeSigma	P4557-400ML	Phenol- Tris Saturated, Equilibrated - 400ml	$178.23

Supplier	Catalog #	Description	Core Store Price
MilliporeSigma	P3803-100ML	Phenol: Chloroform 25:24:1 - 100ml	$59.95
MilliporeSigma	P0044-1ML	Phosphatase Inhibitor Cocktail 3 - 1ml	$69.20
MilliporeSigma	P5726-1ML	Phosphatase Inhibitor Cocktail II - 1ml	$57.50
MilliporeSigma	4906845001	PhosSTOP - 10 tablets	$117.20
MilliporeSigma	4906837001	PhosSTOP - 20 tablets	$228.94
MilliporeSigma	P6407-5MG	Poly-D-Lysine - 5mg	$32.41
MilliporeSigma	P4832-50ML	Poly-l-Lysine - 50ml	$80.55
MilliporeSigma	P2714-1BTL	Protease Inhibitor - 1 bottle	$41.99
MilliporeSigma	P8340-1ML	Protease Inhibitor Cocktail - 1ml	$74.00
MilliporeSigma	P8340-5ML	Protease Inhibitor Cocktail - 5ml	$139.76
MilliporeSigma	3115879001	Proteinase K - 100mg	$90.16
MilliporeSigma	3115828001	Proteinase K Solution, PCR Grade - 5ml	$143.52
MilliporeSigma	P8833-25MG	Puromycin - 25mg	$66.06
MilliporeSigma	F7425-.2MG	Rabbit-Anti flag - 0.2mg	$287.50
MilliporeSigma	R4775-1.2ML	Redextract-N-amp kit - 1.2ml	$95.80
MilliporeSigma	XNAT-100RXN	REDExtract-N-Amp™ Tissue PCR Kit - 100rxn	$199.55
MilliporeSigma	R2523-100RXN	RedTaq Ready Mix PCR Mix - 100rxns	$58.65
MilliporeSigma	R0278-50ML	Ripa Buffer - 50ml	$45.14
MilliporeSigma	R0901-100ML	RNAlater - 100ml	$111.44
MilliporeSigma	R2020-250ML	RNaseZap - 250ml	$45.17
MilliporeSigma	R8758-500ML	RPMI 1640 - 500ml	$4.96
MilliporeSigma	S8636-100ML	Sodium Pyruvate - 100ml	$6.49
MilliporeSigma	S5016-500G	Sucrose ACS Reagent - 500g	$15.51
MilliporeSigma	T5648-1G	Tamoxifen free base - 1g	$205.00
MilliporeSigma	T9039-10PAK	Tris Buffered Saline, ph 8.0 - 10pk	$21.85
MilliporeSigma	T9284-100ML	Triton X 100 - 100ml	$58.83
MilliporeSigma	T4049-100ML	Trypsin-EDTA 0.25 % - 100ml	$10.95
MilliporeSigma	P7949-100ML	Tween 20 - 100ml	$31.20
MilliporeSigma	6366244001	X-tremeGENE HP DNA Transfection Reagent - .4ml	$182.16

New England Biolabs

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

New England Biolabs	N3232S	1 kb DNA Ladder - 100µg	$39.96
New England Biolabs	N3232L	1 kb DNA Ladder - 500µg	$159.85
New England Biolabs	N3231L	100 bp DNA Ladder - 250µg	$168.90
New England Biolabs	N3231S	100 bp DNA Ladder - 50µg	$42.22
New England Biolabs	N0467S	100 bp DNA Ladder, Quick Load - 125 lanes	$61.83
New England Biolabs	N3200S	2-Log DNA Ladder - 100µg	$42.22
New England Biolabs	N3200L	2-Log DNA Ladder - 500µg	$168.90
New England Biolabs	N3236S	50bp DNA Ladder - 100µg	$48.26
New England Biolabs	R0520S	Afl II - 2,000u	$47.50
New England Biolabs	R3552L	AgeI HF - 1500u	$213.38

Supplier	Catalog #	Description	Core Store Price
New England Biolabs	R3552S	AgeI-HF - 300u	$52.78
New England Biolabs	M0290S	Alkaline Phosphatase,Calf Intest(CIP)-1,000u	$56.55
New England Biolabs	M0289S	Antarctic Phosphatase - 1,000u	$49.01
New England Biolabs	R0558S	Asc I - 500u	$49.76
New England Biolabs	P0756S	ATP - (Adenosine-5 Triphosphate) 10 mM - 1ml	$24.88
New England Biolabs	R0174S	Avr II - 100u	$51.27
New England Biolabs	R3136S	BamH I - HF - 10,000u	$43.73
New England Biolabs	R0539S	Bbs I - 200u	$49.76
New England Biolabs	R0144S	Bgl II - 2,000u	$43.73
New England Biolabs	M0367S	Blunt/TA Ligase Master Mix - 50rxns	$72.38
New England Biolabs	B9000S	BSA-Molecular Biology Grade - 12mg	$21.11
New England Biolabs	R0580S	BsmB I - 200u	$53.53
New England Biolabs	R0197S	Cla I - 1,000u	$47.50
New England Biolabs	M0210S	DNA Polymerase I, Klenow Fragment - 200u	$45.99
New England Biolabs	M0303S	DNase I (RNase-Free) - 1,000u	$52.03
New England Biolabs	N0447S	dNTP Solution Mix - 8µmol ea	$44.49
New England Biolabs	N0446S	dNTP Solution Set - 25µmol ea	$122.90
New England Biolabs	R0176S	Dpn I - 1,000u	$47.50
New England Biolabs	R3101S	EcoR I HF - 10,000u	$43.73
New England Biolabs	R3195S	EcoR V HF - 4000u	$43.73
New England Biolabs	B7021S	Gel Loading Dye Blue (6x) - 4ml	$35.44
New England Biolabs	E2611S	Gibson Assembly Master Mix - 10rxns	$119.89
New England Biolabs	R3104S	HINDIII-HF - 10,000u	$43.73
New England Biolabs	R3142S	Kpn I- HF - 4,000u	$47.50
New England Biolabs	E3005S	Luna® Universal One-Step RT-qPCR Kit - 200rxns	$164.27
New England Biolabs	E3005L	Luna® Universal One-Step RT-qPCR Kit - 500rxns	$369.95
New England Biolabs	E3006S	Luna® Universal Probe One-Step RT-qPCR Kit-200rxns	$148.12
New England Biolabs	E3006L	Luna® Universal Probe One-Step RT-qPCR Kit-500rxns	$333.45
New England Biolabs	M3004S	Luna® Universal Probe qPCR Master Mix - 200rxns	$69.50
New England Biolabs	M3004L	Luna® Universal Probe qPCR Master Mix - 500rxns	$156.55
New England Biolabs	M3003S	Luna® Universal qPCR Master Mix - 200rxns	$80.73
New England Biolabs	M3003L	Luna® Universal qPCR Master Mix - 500rxns	$181.82
New England Biooabs	R0198S	Mlu I - 1,000u	$47.50
New England Biolabs	T1020L	Monarch DNA Gel Extraction Kit - 250preps	$319.41
New England Biolabs	T1020S	Monarch DNA Gel Extraction Kit - 50preps	$69.50
New England Biolabs	T1030S	Monarch PCR & DNA Cleanup Kit (5 µg) - 50preps	$69.50
New England Biolabs	R3193S	NcoI - HF - 1,000u	$45.99
New England Biolabs	R0111S	Nde I - 4,000u	$47.50
New England Biolabs	C2987H	NEB 5-Alpha Competent Cells - 20 x .05ml	$144.01
New England Biolabs	C2987I	NEB 5-alpha Competent E.coli - 6 X 0.2ml	$112.35
New England Biolabs	C2984H	NEB Turbo Competent E.coli - 20 x .05ml/tube	$190.76
New England Biolabs	R3131S	NheI-HF - 1,000u	$49.76

Supplier	Catalog #	Description	Core Store Price
New England Biolabs	R3189L	Not I HF - 2500u	$216.40
New England Biolabs	R3189S	Not I HF - 500u	$53.53
New England Biolabs	M0480L	OneTaq® DNA Polymerase - 1000u	$123.66
New England Biolabs	R0547S	Pac I - 250u	$50.52
New England Biolabs	M0530S	Phusion High-Fidelity DNA Polymerase - 100u	$79.92
New England Biolabs	M0530L	Phusion High-Fidelity DNA Polymerase - 500u	$319.70
New England Biolabs	M0531L	Phusion High-Fidelity PCR Master Mix - 500rxns	$527.80
New England Biolabs	M0531S	Phusion High-Fidelity PCR Master Mix -100rxns	$131.95
New England Biolabs	M0535L	Phusion Hot Start Flex DNA Polymerase - 500u	$395.10
New England Biolabs	R0560S	Pme I - 500u	$53.53
New England Biolabs	P8107S	Proteinase K, Molecular Biology Grade - 2ml	$55.80
New England Biolabs	R3140S	Pst I-HF -10,000u	$47.50
New England Biolabs	M0492S	Q5 High-Fidelity 2X Master Mix - 100rxns	$129.69
New England Biolabs	M0491S	Q5 High-Fidelity DNA Polymerase - 100u	$79.17
New England Biolabs	M0494S	Q5 Hot Start High-Fidelity 2X Master Mix - 100rxns	$150.80
New England Biolabs	M0493S	Q5 Hot Start High-Fidelity DNA Polymerase - 100u	$97.27
New England Biolabs	E0554S	Q5 Site-Directed Mutagenesis Kit - 10rxns	$141.75
New England Biolabs	M2200S	Quick Ligation Kit - 30rxns	$73.14
New England Biolabs	M0297S	RNase H - 250u	$50.52
New England Biolabs	M0307S	RNase Inhibitor - 2,000u	$58.81
New England Biolabs	R3156S	Sac I HF - 2,000u	$43.73
New England Biolabs	R3138S	Sal I - HF - 2,000u	$45.99
New England Biolabs	R3133S	SpeI HF - 500u	$49.76
New England Biolabs	R3182S	SphI HF - 500u	$49.76
New England Biolabs	C2988J	Subcloning Efficiency 5-alpha Comp cells- 6 x0.4ml	$52.03
New England Biolabs	M0202L	T4 DNA Ligase - 100,000u	$193.02
New England Biolabs	M0202S	T4 DNA Ligase - 20,000u	$48.26
New England Biolabs	M0202T	T4 DNA Ligase (2,000,000u/ml) - 20,000u	$48.26
New England Biolabs	B0202S	T4 DNA Ligase Reaction Buffer - 6.0 ml	$15.83
New England Biolabs	M0203S	T4 DNA Polymerase - 150u	$49.76
New England Biolabs	M0201S	T4 Polynucleotide Kinase - 500u	$42.22
New England Biolabs	E2050S	T7 Quick High Yield RNA synthesis kit	$200.56
New England Biolabs	M0273S	Taq DNA Polymerase with Standard Taq Buffer- 400u	$46.75
New England Biolabs	M0267L	Taq DNA Polymerase with ThermoPol Buffer - 2,000	$183.98
New England Biolabs	M0267S	Taq DNA Polymerase with ThermoPol Buffer - 400u	$45.99
New England Biolabs	R0145S	Xba I - 3,000u	$51.27
New England Biolabs	R0146S	Xho I - 5,000u	$51.27
New England Biolabs	R0180S	Xma I - 500u	$49.76

Peprotech

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Supplier	Catalog #	Description	Core Store Price

Promega

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Promega	E1605	Beetle Luciferin, Potassium Salt 1g	$273.31
Promega	G3580	CellTiter 96® AQueous One Assay - 1000 assays	$289.80
Promega	G7571	CellTiter-Glo® Luminescent Cell Viability Assay	$483.00
Promega	U1515	dNTP Mix - 1,000µl	$52.61
Promega	E2920	Dual-Glo(TM) Luciferase Assay System - 10ml	$200.10
Promega	E1910	Dual-Luciferase® Reporter Assay System - 100 assay	$192.34
Promega	E1960	Dual-Luciferase® Reporter Assay System - 10pk	$1,230.79
Promega	E2691	FuGENE® 6 Transfection Reagent - 1ml	$400.00
Promega	A5003	GoScript™ Reverse Transcriptase - 100rxns	$111.38
Promega	A6001	GoTaq® qPCR Master Mix - 200 Reactions	$216.78
Promega	M3005	GoTaq® DNA Polymerase - 500u	$106.15
Promega	M8295	GoTaq® Flexi DNA Polymerase - 500u	$106.15
Promega	M7123	GoTaq® Green Master Mix - 1000rxns	$283.30
Promega	M7122	GoTaq® Green Master Mix - 100rxns	$32.89
Promega	E1501	Luciferase Assay Reagent - 10pk	$608.93
Promega	E1500	Luciferase Assay System - 100 assays	$90.56
Promega	M1701	M-MLV Reverse Transcriptase - 10,000u	$50.08
Promega	M7502	PCR Master Mix - 100rxns	$71.76
Promega	A1360	pGEM®-T Easy Vector System I - 20rxn	$138.86
Promega	C1181	Random Primers - 20µg	$38.12
Promega	N2511	Recombinant RNasin® Ribonuclease Inhibitor-2,500u	$93.38
Promega	N2615	RNasin® Plus RNase Inhibitor - 10,000u	$273.70
Promega	N2115	RNasin® Ribonuclease Inhibitor - 10,000	$401.70
Promega	V5111	Sequencing Grade Modified Trypsin - 100µg	$82.98
Promega	P1193	Water, Nuclease-Free - 50ml (2 x 25ml)	$46.92

QIAGEN

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

QIAGEN	69506	DNeasy Blood & Tissue Kit - 250	$642.74
QIAGEN	69504	DNeasy Blood & Tissue Kit - 50	$149.97
QIAGEN	201901	dNTP Mix PCR Grade - 800µl	$148.78
QIAGEN	12362	EndoFree Plasmid Maxi Kit - 10	$317.64
QIAGEN	12662	HiSpeed Plasmid Maxi Kit (10)	$265.48
QIAGEN	12663	HiSpeed Plasmid Maxi Kit (25)	$648.32
QIAGEN	12643	HiSpeed Plasmid Midi Kit (25)	$323.23
QIAGEN	217004	miRNeasy Mini Kit - 50 preps	$326.96
QIAGEN	30210	Ni-NTA Agarose - 25ml	$274.79
QIAGEN	205111	Omniscript RT Kit (50)	$225.32
QIAGEN	301107	PolyFect Transfection Reagent - 4 x 1ml	$539.34
QIAGEN	19131	Proteinase K - 2ml	$85.42

Supplier	Catalog #	Description	Core Store Price
QIAGEN	51104	QIAamp DNA Blood Mini Kit (50)	$139.73
QIAGEN	51304	QIAamp DNA Mini Kit (50)	$150.90
QIAGEN	20021	QIAEX II Gel Extraction Kit (150)	$167.67
QIAGEN	12162	QIAGEN Plasmid Maxi Kit (10)	$224.49
QIAGEN	12163	QIAGEN Plasmid Maxi Kit (25)	$517.91
QIAGEN	12143	QIAGEN Plasmid Midi Kit (25)	$258.96
QIAGEN	12123	QIAGEN Plasmid Mini Kit (25)	$193.75
QIAGEN	27115	QIAprep Spin Miniprep Columns	$85.33
QIAGEN	27106	QIAprep Spin Miniprep Kit (250)	$360.49
QIAGEN	27104	QIAprep Spin Miniprep Kit (50)	$85.42
QIAGEN	28706	QIAquick Gel Extraction Kit (250)	$509.53
QIAGEN	28704	QIAquick Gel Extraction Kit (50)	$107.12
QIAGEN	28106	QIAquick PCR Purification Kit (250)	$505.80
QIAGEN	28104	QIAquick PCR Purification Kit (50)	$106.19
QIAGEN	79656	QIAshredder (250)	$340.93
QIAGEN	79654	QIAshredder (50)	$78.90
QIAGEN	205313	QuantiTect Rev. Transcription Kit (200)	$1,034.58
QIAGEN	205311	QuantiTect Rev. Transcription Kit (50)	$302.72
QIAGEN	204143	QuantiTect SYBR Green PCR Kit (200)	$371.52
QIAGEN	76104	RNAlater RNA Stabilization Reagent - 50ml	$74.15
QIAGEN	19101	RNase A - 17,500u	$196.55
QIAGEN	79254	RNase-Free DNase Set (50)	$96.88
QIAGEN	74804	RNeasy Lipid Tissue Mini Kit (50)	$359.56
QIAGEN	74106	RNeasy Mini Kit (250)	$1,227.72
QIAGEN	74104	RNeasy Mini Kit (50)	$280.38
QIAGEN	74134	RNeasy Plus Mini Kit (50)	$319.50
QIAGEN	330401	RT2 First Strand cDNA Kit - 12rxns (20µl each)	$208.66
QIAGEN	201205	Taq DNA Polymerase - 1000u	$380.12
QIAGEN	201203	Taq DNA Polymerase - 250u	$110.08

Quality Biological

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

Quality Biological	351-059-101	10X RNA Gel Buffer (MOPS) - 500ml	$24.00
Quality Biological	351-008-131	50X TAE Buffer (Tris Acetate) -1l	$34.41
Quality Biological	118-156-721	ACK Lysing Buffer - 4 x 100ml	$48.99
Quality Biological	118-156-101	ACK Lysing Buffer - 500ml	$30.14
Quality Biological	351-344-731	Ampicillin Solution - 10 X 1ml (100mg/ml)	$71.22
Quality Biological	118-162-101	Cell Culture Grade Water - 500ml	$9.29
Quality Biological	351-068-131CS	DEPC Treated Water - 10 x 1L	$201.68
Quality Biological	351-068-131	DEPC Treated Water - 1L	$22.41
Quality Biological	351-068-721	DEPC Treated Water - 4 x 100ml	$34.80
Quality Biological	351-028-661	DNA Gel Loading Solution(5X) - 5 x 10ml	$53.18

Supplier	Catalog #	Description	Core Store Price
Quality Biological	114-059-101	DPBS w/ CaMg - 500ml	$9.02
Quality Biological	112-018-101	E-MEM w/L-glutamine - 500ml	$9.01
Quality Biological	118-288-061	Glutamine XL - 100ml	$20.91
Quality Biological	114-062-101	HBSS w/o phenol red & CaMg - 500ml	$11.02
Quality Biological	118-089-721	Hepes Buffer Soln (1M) - 4 x 100ml	$103.90
Quality Biological	112-035-101	IMDM - 500ml	$19.62
Quality Biological	120-349-731	Kanamycin 50mg/ml - 10 x 1ml	$62.43
Quality Biological	118-084-721EA	L-Glutamine 200mM - 100ml	$18.83
Quality Biological	340-147-231	LB Agar Plates w/50µg/ml Kanamycin - 10ea x 25ml	$25.16
Quality Biological	340-108-231	LB Agar Plates,100µg/ml Ampicillin -10ea	$26.48
Quality Biological	340-004-101CS	LB Broth (Lauria Bertani) - 10 x 500ml	$89.05
Quality Biological	340-004-101	LB Broth (Lauria Bertani) - 500ml	$9.34
Quality Biological	351-033-721	Magnesium Chloride 1m, - 4 x 100ml	$38.70
Quality Biological	114-055-101	Normal Saline - 500ml	$7.91
Quality Biological	114-058-101CS	PBS (1X) pH 7.4 w/o CaMg - 10 x 500ml	$74.98
Quality Biological	114-058-101	PBS (1X) pH 7.4 w/o CaMg - 500ml	$7.78
Quality Biological	119-069-131CS	PBS 10X pH 7.4 - 10 x 1L	$227.59
Quality Biological	119-069-131	PBS 10X pH 7.4 - 1L	$24.19
Quality Biological	120-095-721	Penicillin Streptomycin - 4 x 100ml	$42.76
Quality Biological	112-301-101	RPMI-1640 w/ Glutamine XL - 500ml	$8.66
Quality Biological	112-301-101CS	RPMI-1640 w/ L-Glutamine XL - 10 x 500ml	$77.87
Quality Biological	340-031-671	SOC Medium - 10 x 10ml	$36.28
Quality Biological	351-036-101	Sodium Chloride, 5M - 500ml	$11.20
Quality Biological	351-001-131	TBE Buffer (10X) - 1L	$24.43
Quality Biological	351-086-101	TBS pH 7.4 (10X) - 500ml	$17.21
Quality Biological	351-086-101CS	TBS, 10x pH 7.4 Case - 10 x 500ml	$163.53
Quality Biological	351-011-131	TE pH 8.0 - 1000ml	$21.32
Quality Biological	351-006-101	Tris-HCL 1M pH 7.5 - 500ml	$14.96
Quality Biological	351-007-101	Tris-HCL 1M pH 8.0 - 500ml	$14.96
Quality Biological	118-093-721	Trypsin 0.25% EDTA 0.02% - 4 x 100ml	$32.19
Quality Biological	351-161-671	Water-PCR Qualified Pure - 10 x 10ml	$95.94
Quality Biological	118-162-131	Water, Cell Culture Grade (Ultra Pure) -1L	$17.72
Quality Biological	351-029-721	Water, Molecular Biology Grade - 4 x 100ml	$32.88
Quality Biological	351-029-131	Water, Molecular Biology Grade- 1L	$12.47

Roche Applied Science

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing

Roche Applied Science	4707494001	LightCycler 480 Probes Master	$265.41

Supplier	Catalog #	Description	Core Store Price

ThermoFisher Scientific

Special orders are available. Check http://grcf.jhmi.edu/core-store/ for a complete listing.

ThermoFisher Scientific	10787018	1 kb Plus DNA Ladder - 250µg	$134.25
ThermoFisher Scientific	21985023	2-Mercaptoethanol, 55mM - 50ml	$34.88
ThermoFisher Scientific	R0611	6X Loading Dye Solution - 5 x 1ml	$30.95
ThermoFisher Scientific	4346907	96 - Well Fast Thermal Cycling Plates - 10pk	$31.57
ThermoFisher Scientific	12055091	AIM V Medium, liquid - 500ml	$70.75
ThermoFisher Scientific	R96025	Anti-V5 antibody - 50µl	$183.57
ThermoFisher Scientific	15240062	Antibiotic Antimycotic (100X) - 100ml	$33.63
ThermoFisher Scientific	17504044	B-27 Serum Free Supplement (50X) - 10ml	$84.29
ThermoFisher Scientific	12587010	B-27 Supplement w/o Vitamin A (50X) - 10ml	$103.96
ThermoFisher Scientific	10748010	BENCHMARK™ Prestained Protein Ladder - 500u	$186.38
ThermoFisher Scientific	13256029	bFGF, Human, Recombinant - 10µg	$167.65
ThermoFisher Scientific	R21001	Blasticidin - 50mg	$161.76
ThermoFisher Scientific	NW04120BOX	Bolt™ 4-12% Bis-Tris Plus 10 Well - 10gels	$113.17
ThermoFisher Scientific	NW04122BOX	Bolt™ 4-12% Bis-Tris Plus 12 Well - 10gels	$113.17
ThermoFisher Scientific	C10228	Countess Chamber Slides - 50 slides	$86.17
ThermoFisher Scientific	R007100	Defined Trypsin Inhibitor-100ml	$39.00
ThermoFisher Scientific	15230204	Distilled Water - 10 x 500ml	$68.74
ThermoFisher Scientific	15230162	Distilled Water - 500ml	$8.37
ThermoFisher Scientific	11965118	DMEM (1X), high glucose - 10 x 500ml	$79.61
ThermoFisher Scientific	11965092	DMEM (1X), high glucose - 500ml	$8.41
ThermoFisher Scientific	11995073	DMEM (1X), high glucose 10x500ml w/sodium pyruvate	$81.89
ThermoFisher Scientific	11995065	DMEM (1X), high glucose w/ sodium pyruvate - 500ml	$11.29
ThermoFisher Scientific	11885092	DMEM (1X), low glucose - 10 x 500ml	$97.81
ThermoFisher Scientific	11885084	DMEM (1X), low glucose - 500ml	$8.41
ThermoFisher Scientific	11330057	DMEM/F-12, liquid (1:1) - 10 x 500ml	$146.51
ThermoFisher Scientific	11330032	DMEM/F-12, liquid (1:1) - 500ml	$31.70
ThermoFisher Scientific	AM1906	DNA-free™ - 50rxns	$108.65
ThermoFisher Scientific	18068015	DNase I - Amplification Grade - 100u	$103.71
ThermoFisher Scientific	18427013	dNTP Mix 10mM - 100µl	$32.66
ThermoFisher Scientific	18427088	dNTP Mix 10mM - 1ml	$201.60
ThermoFisher Scientific	R0192	dNTP Mix 10mM - 1ml	$87.87
ThermoFisher Scientific	10297018	dNTP Set 100mM - 4 x 25µmol	$203.38
ThermoFisher Scientific	14200075	DPBS (10X) - 500ml	$34.34
ThermoFisher Scientific	14190250	DPBS (1X) w/o CaMg - 10 x 500ml	$75.66
ThermoFisher Scientific	14190144	DPBS (1X) w/o CaMg - 500ml	$8.46
ThermoFisher Scientific	K1081	DreamTaq™ Green PCR Master Mix (2X) - 200rxns	$73.22
ThermoFisher Scientific	R0861	DTT - 5g	$80.75
ThermoFisher Scientific	10003D	Dynabeads® Protein G - 1ml	$173.27
ThermoFisher Scientific	A1517001	Essential 8™ Medium w/supplements - 500ml	$193.42
ThermoFisher Scientific	4385612	Fast SYBR® Green Master Mix - 1 x 5ml	$180.18

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	26140079	Fetal Bovine Serum U.S., Qualified - 500ml	Market Price
ThermoFisher Scientific	16140071	Fetal Bovine Serum, Qual, Heat Inactivated - 500ml	Market Price
ThermoFisher Scientific	11789020	Gateway BP Clonase II enzyme mix - 20rxns	$201.37
ThermoFisher Scientific	11791020	GATEWAY®LR Clonase II enzyme mix - 20rxns	$223.85
ThermoFisher Scientific	A1413202	Geltrex LDEV-Free RGF - 5ml	$180.76
ThermoFisher Scientific	K0503	GeneJET™ Plasmid Miniprep Kit - 250preps	$227.20
ThermoFisher Scientific	SM0323	GeneRuler™ 100bp DNA Ladder Plus, RTU- 100apps	$66.50
ThermoFisher Scientific	SM0243	GeneRuler™ 100bp DNA Ladder, RTU - 100apps	$55.21
ThermoFisher Scientific	SM0313	GeneRuler™ 1kb DNA Ladder - 500apps	$138.54
ThermoFisher Scientific	10131035	Geneticin® - 20ml	$122.69
ThermoFisher Scientific	35050061	GlutaMAX-I Supplement-100ml	$27.37
ThermoFisher Scientific	R0561	Glycogen - 0.5ml	$59.70
ThermoFisher Scientific	14170161	HBSS (1X) w/o CaMg -10 x5 00ml	$79.54
ThermoFisher Scientific	14170112	HBSS (1X) w/o CaMg- - 500ml	$8.91
ThermoFisher Scientific	14175103	HBSS (1X) w/o phenol red - 10 x 500ml	$83.42
ThermoFisher Scientific	14175095	HBSS (1X) w/o phenol red - 500ml	$9.13
ThermoFisher Scientific	15630080	Hepes Buffer Soln (1M) - 100ml	$33.99
ThermoFisher Scientific	4368814	High Capacity cDNA Kit - 200rxns	$195.98
ThermoFisher Scientific	4387406	High Capacity RNA-to-cDNA Kit - 50rxns	$153.13
ThermoFisher Scientific	10687010	Hygromycin B - 20ml	$172.33
ThermoFisher Scientific	IB301031	iBlot® Transfer Stack, Regular - 3 x 10sets	$458.80
ThermoFisher Scientific	12440061	IMDM (1X) - 10 x 500ml	$188.84
ThermoFisher Scientific	12440053	IMDM (1X) - 500ml	$26.05
ThermoFisher Scientific	51500056	Insulin-Transferrin-Selenium-X Suppl.(100X) - 10ml	$63.50
ThermoFisher Scientific	12585014	Insulin, Human Recombinant, Zinc Solution - 5ml	$40.27
ThermoFisher Scientific	15529019	IPTG - 1g	$57.98
ThermoFisher Scientific	17005042	Keratinocyte-SFM with supplements - 500ml	$89.68
ThermoFisher Scientific	10828028	Knockout™ Serum - 500ml	$310.95
ThermoFisher Scientific	25030081	L-Glutamine 200mM (100X) - 100ml	$17.15
ThermoFisher Scientific	23017015	Laminin, Mouse, Natural - 1mg	$122.69
ThermoFisher Scientific	11415064	Leibovitz's L-15 Medium w/phenol (1X) - 500ml	$31.87
ThermoFisher Scientific	L3000008	Lipofectamine® 3000 Reagent - 0.75ml	$365.27
ThermoFisher Scientific	L3000015	Lipofectamine® 3000 Reagent - 1.5ml	$605.04
ThermoFisher Scientific	11668027	Lipofectamine® 2000 Transfection Reagent - .75ml	$292.35
ThermoFisher Scientific	11668019	Lipofectamine® 2000 Transfection Reagent - 1.5ml	$539.48
ThermoFisher Scientific	15338100	Lipofectamine® LTX and Plus Reagent - 1ml	$527.44
ThermoFisher Scientific	13778075	Lipofectamine® RNAiMAX - 0.75ml	$399.93
ThermoFisher Scientific	18258012	MAX Efficiency DH5Alpha™ Competent Cells - 1ml	$183.04
ThermoFisher Scientific	K0221	Maxima™SYBR Green qPCR Master Mix (2X) -2 x 1.25ml	$155.48
ThermoFisher Scientific	16600108	McCoy's 5A Medium (1X) - 10 x 500ml	$148.67
ThermoFisher Scientific	16600082	McCoy's 5A Medium (1X) - 500ml	$24.56
ThermoFisher Scientific	11140050	MEM NEAA (100X) 10mM - 100ml	$17.24

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	11095098	MEM w/ L-glutamine (1X) - 10 x 500ml	$77.34
ThermoFisher Scientific	11095080	MEM w/ L-glutamine (1X) - 500ml	$9.20
ThermoFisher Scientific	4346906	MicroAmp® Fast Optical 96-Well Plate - 20 plates	$65.65
ThermoFisher Scientific	N8010560	MicroAmp® Optical 96-Well Reaction Plate-10/bx	$48.52
ThermoFisher Scientific	4311971	MicroAmp® Optical Adhesive Film - 100 covers	$169.84
ThermoFisher Scientific	N8080018	MuLV Reverse Transcriptase - 5,000u	$62.38
ThermoFisher Scientific	17502048	N-2 Supplement - 5ml	$73.05
ThermoFisher Scientific	21103049	Neurobasal-SFM - 500ml	$60.88
ThermoFisher Scientific	LC2000	Nitrocellulose Pre-Cut Membranes, .2µm - 20pk	$158.29
ThermoFisher Scientific	LC5800	Novex Sharp Prestained Protein Standard- 2 x 250µl	$143.58
ThermoFisher Scientific	XP04205BOX	Novex WedgeWell 4-20% Tris-Glycine Mini Gels, 15-w	$82.62
ThermoFisher Scientific	NP0322BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 12 well -10gels	$133.93
ThermoFisher Scientific	NP0323BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm, 15 well-10gels	$133.93
ThermoFisher Scientific	NP0321BOX	NuPAGE® 4-12% Bis-Tris Gel 1.0 mm,10 well -10gels	$133.93
ThermoFisher Scientific	NP0335BOX	NuPAGE® 4-12% Bis-Tris Gel 1.5 mm, 10 well-10gels	$133.93
ThermoFisher Scientific	NP0005	NuPAGE® Antioxidant - 15ml	$26.22
ThermoFisher Scientific	NP0007	NuPAGE® LDS Sample Buffer (4X) - 10ml	$14.05
ThermoFisher Scientific	NP0002	NuPAGE® MES SDS Running Buffer (20X) - 500ml	$71.18
ThermoFisher Scientific	NP0001	NuPAGE® MOPS SDS Running Buffer (20X) - 500ml	$71.18
ThermoFisher Scientific	NP0004	NuPAGE® Sample Reducing Agent (10X) - 250µl	$14.05
ThermoFisher Scientific	NP0006	NuPAGE® Transfer Buffer (20X) - 125ml	$22.48
ThermoFisher Scientific	NP00061	NuPAGE® Transfer Buffer (20X) - 1L	$151.73
ThermoFisher Scientific	18418012	Oligo(dT)12-18 Primer - 25µg	$72.82
ThermoFisher Scientific	C737303	One Shot® Stabl3 Competent E. coli - 20 x 50µl	$373.70
ThermoFisher Scientific	C404003	One Shot® TOP10 Competent E. coli - 20rxns	$347.43
ThermoFisher Scientific	31985088	Opti-MEM I - 10 x 500ml	$382.13
ThermoFisher Scientific	31985070	Opti-MEM I - 500ml	$44.14
ThermoFisher Scientific	12309019	Opti-Pro SFM - 1,000mL	$91.75
ThermoFisher Scientific	26619	PageRuler™ Prestained Protein Ladder Plus,RTU-100	$112.00
ThermoFisher Scientific	10010049	PBS (1X) w/o CaMg, liquid - 10 x 500ml	$67.18
ThermoFisher Scientific	10010023	PBS (1X) w/o CaMg, liquid - 500ml	$8.02
ThermoFisher Scientific	15140122	Penicillin Streptomycin - 100ml	$10.67
ThermoFisher Scientific	15140163	Penicillin Streptomycin - 20 x 100ml	$211.94
ThermoFisher Scientific	F530L	Phusion High-Fidelity DNA - 500u	$270.37
ThermoFisher Scientific	F530S	Phusion High-Fidelity DNA Polymerase- 100u	$67.44
ThermoFisher Scientific	11306016	PLATINUM® PCR Super Mix - 100rxns	$114.80
ThermoFisher Scientific	11708013	PLATINUM® PFX DNA polymerase - 100u	$134.19
ThermoFisher Scientific	10966018	PLATINUM® Taq DNA Polymerase - 100u	$101.15
ThermoFisher Scientific	10966034	PLATINUM® Taq DNA Polymerase - 500u	$374.67
ThermoFisher Scientific	11304011	PLATINUM® Taq DNA Polymerase High Fidelity - 100u	$167.65
ThermoFisher Scientific	4367659	Power SYBR® Green PCR Master Mix (1 x 5ml)-200rxns	$156.99
ThermoFisher Scientific	P36930	ProLong Gold Antifade Reagent - 10ml	$161.10

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	P36931	Prolong Gold Antifade Reagent w/DAPI - 10ml	$168.59
ThermoFisher Scientific	25530015	Proteinase K - 100mg	$97.56
ThermoFisher Scientific	EO0491	Proteinase K - 1ml	$47.20
ThermoFisher Scientific	K210016	PureLink® HiPure Filter Maxi - 10preps	$197.12
ThermoFisher Scientific	K210014	PureLink® HiPure Plasmid Midiprep Kit - 25preps	$233.54
ThermoFisher Scientific	K210010	PureLink® Quick Plasmid Miniprep Kit - 50preps	$61.75
ThermoFisher Scientific	Q32851	Quant-it DSDNA HS Assay Kit	$85.34
ThermoFisher Scientific	Q32856	Qubit assay tubes set - 500sets	$73.52
ThermoFisher Scientific	N8080127	Random Hexamers (50µm) - 1 kit	$59.61
ThermoFisher Scientific	12648010	Recovery Cell Culture Medium - 50ml	$117.08
ThermoFisher Scientific	46430	Restore PLUS western Blot Stripping Buffer	$134.89
ThermoFisher Scientific	21059	Restore Western Blot Stripping Buffer - 500ml	$133.00
ThermoFisher Scientific	EN0531	RNase A (DNase & protease free)-1ml(10mg/ml)	$40.60
ThermoFisher Scientific	N8080119	RNase Inhibitor - 2,000u	$65.64
ThermoFisher Scientific	10777019	RNaseOUT™ - 5000u	$143.00
ThermoFisher Scientific	11875119	RPMI 1640 (1X) w/ L-Glut - 10 x 500ml	$79.61
ThermoFisher Scientific	11875093	RPMI 1640 (1X) w/ L-Glut - 500ml	$8.41
ThermoFisher Scientific	11875135	RPMI 1640 (1X) w/ L-Glut - 6 x 1000ml	$80.45
ThermoFisher Scientific	61870036	RPMI 1640 w/ Glutamax - 500ml	$14.87
ThermoFisher Scientific	LC5925	SeeBlue® Plus 2 Pre-Stained Standard - 500µl	$146.11
ThermoFisher Scientific	LC6060	SimplyBlue™ SafeStain - 1L	$136.74
ThermoFisher Scientific	25080094	Sodium Bicarbonate Soln, 7.5% (w/v) - 100ml	$9.98
ThermoFisher Scientific	11360070	Sodium Pyruvate Solution - 100ml	$9.46
ThermoFisher Scientific	A1110501	StemPro Accutase Cell Dissociation Reagent - 100ml	$40.08
ThermoFisher Scientific	18265017	SUB Efficiency DH5 Alpha™ Comp Cells - 2ml	$56.26
ThermoFisher Scientific	18064014	SuperScript™ II Reverse Transcriptase - 10,000u	$284.73
ThermoFisher Scientific	18080044	SuperScript™ III - 10,000u	$299.85
ThermoFisher Scientific	18080051	SuperScript™ III First Strand Syntesis Kit	$415.85
ThermoFisher Scientific	18080093	SuperScript™ III Rev Transcriptase - 2,000 u	$89.91
ThermoFisher Scientific	34075	SuperSignal West Dura Extended Duration Substrate	$312.55
ThermoFisher Scientific	34080	SuperSignal West Pico Chemiluminescent Substrate	$217.15
ThermoFisher Scientific	34095	SuperSignal™ West Femto Maximum Sensitivity Substrtrate	$334.39
ThermoFisher Scientific	S33102	SYBR Safe DNA Gel Stain - 400µl	$66.03
ThermoFisher Scientific	4309155	SYBR® Green PCR Master Mix (1x5ml) - 200rxns	$181.52
ThermoFisher Scientific	15558026	TAE Buffer (10X) - 4L	$99.92
ThermoFisher Scientific	18038042	Taq DNA Polymerase - 500u	$83.89
ThermoFisher Scientific	10342020	Taq DNA Polymerase, Recombinant - 500u	$80.75
ThermoFisher Scientific	4440038	TaqMan® Universal Master Mix II with UNG 1 Pack	$298.59
ThermoFisher Scientific	4440040	TaqMan® universal master mix II, no ung -200rxns	$280.22
ThermoFisher Scientific	4352042	TaqMan® Fast Universal PCR Master Mix (2X)-250rxns	$180.24
ThermoFisher Scientific	4369016	TaqMan® Gene Expression Master Mix(1x5ml)-200rxns	$281.58
ThermoFisher Scientific	4304437	TaqMan® Universal PCR Master Mix(1x5ml)-200rxns	$355.04

Supplier	Catalog #	Description	Core Store Price
ThermoFisher Scientific	K450001SC	TOPO TA Cloning®, top 10 - 20 rxns	$467.36
ThermoFisher Scientific	10488085	TrackIt™ 1 Kb Plus DNA Ladder - 100apps	$82.21
ThermoFisher Scientific	15596026	TRIZOL® Reagent - 100ml	$125.13
ThermoFisher Scientific	15596018	TRIZOL® Reagent - 200ml	$225.36
ThermoFisher Scientific	15250061	Trypan Blue Stain -100ml	$15.26
ThermoFisher Scientific	12604039	TrypLE™ Express - 20 X 100ml	$239.60
ThermoFisher Scientific	12604013	TrypLE™ Express - 100ml	$16.37
ThermoFisher Scientific	12605010	TrypLE™ Express w/phenol red – 100ml	$16.64
ThermoFisher Scientific	25300120	Trypsin-EDTA .05% - 20 x 100ml	$133.69
ThermoFisher Scientific	25300054	Trypsin-EDTA .05% (1X) - 100ml	$11.73
ThermoFisher Scientific	25200114	Trypsin-EDTA 0.25% - 20 x 100ml	$204.18
ThermoFisher Scientific	25200056	Trypsin-EDTA 0.25% (1X) - 100ml	$11.17
ThermoFisher Scientific	15400054	Trypsin-EDTA 0.5% (10X) w/o phenol red - 100ml	$29.30
ThermoFisher Scientific	AM1907	TURBO DNA-free Kit - 50rxns	$103.96
ThermoFisher Scientific	16500500	UltraPure™ Agarose - 500g	$376.54
ThermoFisher Scientific	10977015	Water, Distilled Water (Ultrapure) - 500ml	$19.95
ThermoFisher Scientific	R25001	Zeocin™ - 8 x 1.25ml	$206.12

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