Fidelity at its finest.

Q5™ High-Fidelity DNA Polymerase

Q5 High-Fidelity DNA Polymerase sets a new standard for both fidelity and performance. With the highest fidelity amplification available (>50X higher than Taq), Q5 DNA Polymerase results in ultra-low error rates. Its unique buffer system provides superior performance for a broad range of amplicons, regardless of GC content. Available in master mix and hot start formulations, Q5 DNA Polymerase represents the finest in fidelity.

ALSO AVAILABLE: Optimized NEBNext® formulation for next generation sequencing library amplification

Robust amplification even with high GC amplicons

Mandarin Ducks (*Aix galericulata*) are frequently featured in Chinese art and are regarded as a symbol of fidelity.
Thermo Scientific Orbitrap mass spec is better, but it’s too expensive. I may have to settle for Q-TOF.

think again.

Thermo Scientific Orbitrap mass spec is better! The amazing resolution, accuracy, speed and precision of Orbitrap™ technology is the best solution for complex sample analysis. The good news is that it’s more affordable than ever. The Orbitrap mass spec portfolio provides a range of solutions from routine screening to ultra-high performance research instruments that will help virtually any lab achieve more. In doubt? Check out the line of researchers waiting to use an Orbitrap mass spec. Then see if there’s a line to use the other mass spectrometers in your lab.

• learn why Orbitrap is better at thermoscientific.com/thinkagain
Purification was never easier!

QIAcube and iPad

Information, update alerts, and much more at the touch of the screen

For a limited time only, we are offering the award-winning spin-column instrument, QIAcube®, together with the new, dedicated QIAcube app and a third generation Apple® iPad®, further facilitating sample preparation by adding:

- Easy access to more than 90 protocols for DNA, RNA, and protein purification
- Automatic checks for new protocols and software updates
- All the user support documents you need

Contact QIAGEN today or visit www.qiagen.com/qiacube-tablet.

Trademarks: QIAGEN®, QIAcube® (QIAGEN Group), Apple®, iPad® (Apple Computer, Inc.). Export regulations may apply. QIAGEN and Apple Computer, Inc. are not affiliated companies. For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual (available at www.qiagen.com, from QIAGEN Technical Services at 00800-22-44-6000, or your local distributor).
**MPC-200**

**Multi-manipulator system**

**Versatile:** User friendly interface controls up to two manipulators with one controller. Select components to tailor a system to fit your needs.

**Expandable:** Daisy chain a second controller and operate up to four manipulators with one input device.

**Stable:** Stepper motors and cross-rolled bearings guarantee reliable, drift-free stability.

**Doubly Quiet:** Linear stepper-motor drive reduces electrical noise. Thermostatically-controlled cooling fans barely whisper.

*Make the right move!*

PHONE: 415.883.0128 | FAX: 415.883.0572

EMAIL: INFO@SUTTER.COM | WWW.SUTTER.COM

---

**AAAS is here – connecting government to the scientific community.**

As a part of its efforts to introduce fully open government, the White House is reaching out to the scientific community for a conversation on America's national scientific and technological priorities. To enable this dialogue, AAAS launched Expert Labs, directed by blogger and tech guru Anil Dash. Expert Labs is building online tools that allow government agencies to ask questions of the scientific community and then sort and rank the answers.

As a AAAS member, your dues support our efforts to help government base policy on direct feedback from the scientific community. If you are not already a member, join us. Together we can make a difference.

To learn more, visit [aaas.org/plusyou/expertlabs](http://aaas.org/plusyou/expertlabs)

AAAS + U = Δ
Launched in March 2012, **SCIENCE & DIPLOMACY** provides an open access forum for rigorous thought, analysis, and insight to serve stakeholders who develop, implement, and teach all aspects of science and diplomacy. **SCIENCE & DIPLOMACY** features a mix of original perspectives and research articles by leading science and diplomacy practitioners and thinkers. Learn more about the latest ideas in science diplomacy and receive regular updates by following @SciDip on Twitter and registering for free at [www.sciencediplomacy.org/user/register](http://www.sciencediplomacy.org/user/register).

**www.sciencediplomacy.org**

**Senior Advisory Board**

Norman P. Neureiter (Chair), AAAS  
Peter C. Agre, Johns Hopkins  
Nicholas Burns, Harvard  
David C. Clary, Oxford and UK FCO  
Paula J. Dobriansky, Harvard  
Nina V. Fedoroff, Penn State and KAUST  
Richard N. Foster, Yale  
David A. Hamburg, AAAS  
Mohamed Hassan, IAP  
Neal F. Lane, Rice
**New Products**

**LOW-TEMPERATURE COOLERS**
A line of low temperature coolers provide rapid, low-cost cooling of liquids to temperatures as low as -100°C. Available in both immersion probe and flow through styles, these compact systems are ideal for cooling exothermic reactions, freeze point determinations, freeze drying, impact testing, lyophilization, and vapor and solvent trapping. Excellent for trapping, Dewar-type applications, and the rapid cool down of small volumes of liquids, PolyScience Immersion Probe Style Coolers reduce the expense of using dry ice or liquid nitrogen and are capable of reaching temperatures as low as -100°C. A flexible hose allows convenient placement of the cooling probe. Seven different models as well as a variety of probe types are available. Capable of reaching temperatures as low as -25°C, PolyScience Flow-Through Style Coolers are ideal for extending the temperature range of nonrefrigerated circulators to below ambient as well as boosting the cooling capacity of refrigerated circulators.

*PolyScience*
For info: 800-229-7569  |  www.policy.com

**IN VITRO TRANSLATION SYSTEM**
1-Step Human High Yield In Vitro Translation (IVT) Kits have a continuous-feed device and can produce 10- to 100-times more functional protein per milliliter than other eukaryotic IVT systems. The protein obtained with the 1-Step Human High Yield IVT Kit can be used for structural analysis, antibody production, and kinetic or enzymatic assays. The kit uses modified HeLa cell extracts to provide the protein expression machinery. Protein expression is performed using a proprietary mini-dialysis device that allows the continuous supply of nucleotides, amino acids, and energy-generating substrates to extend the protein translation reaction. The device also allows the removal of protein synthesis inhibitors. With the kit, protein expression can continue for up to 24 hours, providing protein yields ranging from 250 to 750 µg per milliliter. The complete 1-Step High Yield IVT Kits supply all components necessary for the transcription and translation of protein, including an optimized expression vector, pT7CFE1-CGST-HA-His.

*Thermo Fisher Scientific*
For info: 800-874-3723  |  www.thermo.com/pierce

**IMAGE CYTOMETRY SYSTEM**
The Cytell Image Cytometer is a benchtop-sized image cytometer for rapid cell characterization that introduces researchers to a new, simpler, faster, and more productive way to conduct their cell analysis. The new Cytell Image Cytometer enables researchers to capture detailed data about their cells quickly while using minimal sample volumes. Data can be acquired for up to eight samples at a time and results are delivered through an intuitive graphical interface in less than two-and-a-half minutes. The system simplifies researchers’ working practices and increases productivity by removing the need to use specialized cell analysis instruments. Large cell analysis instruments are often in a shared facility, which can be difficult to access at the right time and time-consuming to use.

*GE Healthcare*
For info: 800-526-3593  |  www.gelifesciences.com/cytell

**TISSUE-SPECIFIC CONDITIONAL KNOCKOUT**
CompoZr Zinc Finger Nuclease (ZFN) technology has been extended to achieve the first tissue-specific conditional knockout of an endogenous gene in rats. Rats engineered to contain tissue-specific conditional gene knockouts are available exclusively through the SAGEspeed Custom Model Development Service. Conventional gene knockout eliminates a gene throughout an entire animal. In contrast, conditional gene knockout can eliminate a gene solely in the relevant tissue or organ, leading to a more accurate understanding of the gene’s function. Conditional gene knockout can also knockout genes at certain points in development, enabling studies of genes whose absence in embryos is lethal, but whose loss of function in adulthood is critical to investigate for many human diseases. CompoZr ZFN technology is the first to enable highly efficient, targeted editing of the genome of any species.

*Sigma-Aldrich*
For info: 800-325-3010  |  www.sageresearchmodels.com

**DIGITAL HOLOGRAPHIC PHOTOMANIPULATION**
The first commercial implementation of a phase-only spatial light modulator (SLM) designed specifically for patterned and 3-D point photomanipulation in optical microscopy. It is a compact, modular device that couples to a microscope documentation port and the 3i LaserStack laser launch. Phasor can be used for optogenetic stimulation, uncaging, and other types of photomanipulation. One major advantage of its technology over older methods is that a significant portion of laser intensity can be simultaneously redirected to just those regions where photomanipulation is desired, rather than being either sequentially scanned or mostly blocked. In optical stimulation of brain slices, for instance, action potentials can be elicited at multiple locations in parallel with less than one millisecond of laser illumination. Region specification, hologram generation, and experimentally synchronized optical path switching and laser illumination gating are managed within 3i’s SlideBook software.

*Intelligent Imaging Innovations*
For info: 303-607-9429  |  www.intelligent-imaging.com

Electronically submit your new product description or product literature information! Go to www.sciencemag.org/products/newproducts.dtl for more information. Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and governmental organizations are featured in this space. Emphasis is given to purposes, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS of any products or materials mentioned is not implied. Additional information may be obtained from the manufacturer or supplier.
Sir Isaac Newton’s contribution to science can only be described as unique. Over his lifetime, Newton offered insights into physics, mathematics, natural philosophy, and even alchemy, and is now considered by many to be one of the greatest scientists who ever lived. In 1687, the publication of his *Philosophiæ Naturalis Principia Mathematica* was an influential landmark in scientific thinking that defined the principles of universal gravitation and the laws of motion—setting the foundation that scientists would turn to for over 300 years.

Today, scientists from around the world turn to *Science*. With 700,000 print readers every week and 3.6 million unique visitors to the online site each month, *Science* reaches more people than any other scientific print publication or website. What’s more, as part of the non-profit AAAS, the revenue generated by *Science* supports programs around the world that help inform science policymakers, enhance science diplomacy, strengthen the scientific workforce, and improve science education.

So if you want to reach physicists, mathematicians, life scientists, or even the occasional alchemist, there’s only one *Science*. Visit *Science* today at scienmag.org.
The next BIG THING from the inventors of SYBR®

highER specificity

bettER performance

lowER price

brightER dye

Introducing SYBR® Select Master Mix with GreenER™ dye

Add ER to your SYBR® at lifetechnologies.com/sybr