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- IL-17E
- IL-17F
- IL-19
- IL-20
- IL-21
- IL-22
- IL-31
- Insulin
- IP-10
- JE
- JNK2a1
- JNK2a2
- KC / CXCL1
- KGF
- L-asparaginase
- LAG-1
- LALF Peptide
- LAR-PTP
- LBP
- LC-1
- LD-78β
- LDH
- LEC / NCC-4
- Leptin
- LIGHT
- LIX
- LKM
- LL-37
- Lungkine / CXCL15
- Lymphotactin
- sLYVE-1
- M-CSF
- MCP-1 (MCAF)
- MCP-2
- MCP-3
- MCP-4
- MCP-5
- MDC (67 a.a.)
- MDC (69 a.a.)
- MDH
- MEC
- Mek-1
- MIA
- Midkine
- MIG / CXCL9
- MIP-1α / CCL3
- MIP-1β / CCL4
- MIP-3 / CCL23
- MIP-3α / CCL20
- MIP-3β / CCL19
- MIP-4 (PARC) / CCL18
- MIP-5 / CCL15
- MMP-3
- MMP-7
- MMP-13
- Myostatin
- Nanog
- NAP-2
- Neurturin
- NFAT-1
- β-NGF
- NOGGIN
- NOV
- NP-1
- NT-1/BCSF-3
- NT-3
- NT-4
- Ocreotide
- Oncostatin M
- Osteoprotegerin (OPG)
- OTOR
- Oxytocin
- p38-α
- PAI-1
- Parathyroid Hormone
- PDGF-AA
- PDGF-AB
- PDGF-BB
- PDGF-CC
- Persephin
- PF-4
- PIGF-1
- PIGF-2
- PKA α-subunit
- PKC-α
- PKC-γ
- Pleiotrophin
- PLGF-1
- Polymyxin B (PMB)
- PRAS40
- PRL-1
- PRL-2
- PRL-3
- Prokineticin-2
- Prolactin
- Protirelin
- PTHrP
- PTP1B
- PTP-IA2
- PTP-MEG2
- PTP-PEST
- sRANK
- sRANKL
- RANTES
- RELM-α
- RELM-β
- Resistin
- RPTPβ
- RPTPγ
- RPTPμ
- SCF
- SCGF-α
- SCGF-β
- SDF-1α
- SDF-1β
- Secretin
- SF20
- SHP-2
- STAT1
- c-Src
- TAC1
- TARC
- TC-PTP
- TECK
- TFF2
- TGF-α
- TGF-β1
- TGF-β2
- TGF-β3
- Thymosin α1
- sTIE-1/Fc Chimera
- sTIE-2/Fc Chimera
- TL-1A
- TNF-α
- TNF-β
- sTNF-receptor Type I
- sTNF-receptor Type II
- TPO
- sTRAIL R-1 (DR4)
- sTRAIL R-2 (DR5)
- TRAIL/Apo2L
- TSG
- TSH
- TSLP
- TWEAK
- TWEAK Receptor
- Urokinase
- EG-VEGF
- VEGF121
- VEGF145
- VEGF165
- VEGF-C
- VEGF-C 1125
- VEGF-E
- HB-VEGF-E
- sVEGFR-1
- sVEGFR-2
- sVEGFR-3
- Visfatin
- WISP-1
- WISP-2
- WISP-3
- WNT-1

### PROTEINS

- 4-1BBL
- 4-1BB Receptor
- 6 Ckine
- ACAD8
- ACAT2
- gAcrp30/Adipolean
- Activin A
- Activin B
- ACY1
- ADAT1
- Adiponectin
- ADRP
- AITRL
- Akt1
- Alpha-Feto Protein (AFP)
- Alpha-Galactosidase A
- Angiopoietin-1 (Ang-1)
- Angiopoietin-2 (Ang-2)
- Angiostatin K1-3
- Annexin-V
- apo-SAA
- Apolipoprotein A-1
- Apolipoprotein E2
- Apolipoprotein E3
- Apolipoprotein E4
- APRIL
- Artemin
- ATF2
- Aurora A
- Aurora B
- BAFF
- BAFF Receptor
- BCA-1 / BLC / CXCL13
- BCMA
- BD-1
- BD-2
- BD-3
- BDNF
- Betacellulin
- Bivalirudin
- BMP-2
- BMP-4
- BMP-6
- BMP-7
- BMP-13
- sBMPR-1A
- Brain Natriuretic Protein
- BRAK
- Breast Tumor Antigen
- C5a
- C5L2 Peptide
- C-10
- C-Reactive Protein
- C-Src
- Calbindin D-9K
- Calbindin D-28K
- Calbindin D-29K
- Calmodulin
- Calcitonin Acetate
- Carbonic Anhydrase III
- Carcino-embryonic Antigen
- Cardiotrophin-1
- Caspase-3
- Caspase-6
- CD4
- CD14
- CD22
- CD40 Ligand / TRAP
- CD95 / sFas Ligand
- CD105 / Endoglin
- CHIPS
- CNTF
- Collagen
- CREB
- CTACK / CCL27
- CTGF
- CTGFL / WISP-2
- CTLA-4 / Fc
- CXCL16
- CYR61
- Cytokeratin 8
- DEP-1
- Desmopressin
- Disulfide Oxidoreductase
- E-selectin
- ECGF
- EGF
- Elafin / SKALP
- EMAP-II
- ENA-78 / CXCL5
- Endostatin
- Enteropeptidase
- Eotaxin / CCL11
- Eotaxin-2
- Eotaxin-3 (TSC)
- EPHB2
- EPHB4
- Epigen
- Epiregulin
- Eptifibatide
- Erk-2
- Erythropoietin (EPO)
- Exodus-2
- Fas Ligand
- Fas Receptor
- FGF-1 (acidic)
- FGF-2 (basic)
- FGF-4
- FGF-5
- FGF-6
- FGF-7 / KGF
- FGF-8
- FGF-9
- FGF-10
- FGF-16
- FGF-17
- FGF-18
- FGF-19
- FGF-20
- sFGFR-1 (IIIc) / Fc Chimera
- sFGFR-2 (IIIc) / Fc Chimera
- sFGFR-3 / Fc Chimera
- sFGFR-4 / Fc Chimera
- sFlt-1 (native)
- sFlt-1 (D3)
- sFlt-1 (D4)
- sFlt-1 (D5)
- sFlt-1 (D7)
- Flt3-Ligand
- sFlt-4
- sFlt-4 / Fc Chimera
- Follistatin
- FSH
- Fractalkine / CX3C
- G-CSF
- α-Galactosidase A
- Galectin-1
- Galectin-3
- Gastrointestinal CA
- GCP-2
- GDF-3
- GDF-9
- GDF-11
- GDNF
- GLP-1
- Glucagon
- GM-CSF
- Goserelin
- GPBB
- Granzyme B
- GROα
- GROβ
- GROγ
- GRO/MGSA
- Growth Hormone
- Growth Hormone BP
- GST-p21/WAF-1
- HB-EGF
- HCC-1
- HGF
- Histidyl-tRNA synthetase
- Histrelin
- HRG1-β1
- I-309
- I-TAC
- IFN-α
- IFN-α A
- IFN-α 2a
- IFN-α 2b
- IFN-β
- IFN-γ
- IFN-Omega
- IGF-1
- IGF-II
- proIGF-II
- IGFBP-1
- IGFBP-2
- IGFBP-3
- IGFBP-4
- IGFBP-5
- IGFBP-6
- IGFBP-7
- IL-1α
- IL-1β
- IL-2
- IL-3
- IL-4
- sIL-4 Receptor
- IL-5
- IL-6
- sIL-6 Receptor
- IL-7
- IL-8 (72 a.a.)
- IL-8 (77 a.a.)
- IL-9
- IL-10
- IL-11
- IL-12
- IL-13
- IL-13 analog
- IL-15
- IL-16 (121 a.a.)
- IL-16 (130 a.a.)
- IL-17
- IL-17B
- IL-17D

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GE31-07

Submission deadline  
August 1

# Get published in *Science*, meet the Nobel laureates, win a trip to Stockholm and \$25,000.

Established in 1995, the GE & *Science* Prize for Young Life Scientists brings science to life by recognizing outstanding Ph.D.s from around the world and rewarding their research in the field of molecular biology.

This is your chance to gain international acclaim and recognition for yourself and your faculty, and to turn your scientific ideas into reality.

- If you were awarded your Ph.D. in molecular biology\* during 2007, describe your work in a 1000-word essay.
- Submit your essay for the 2008 GE & *Science* Prize for Young Life Scientists.
- A panel of distinguished scientists will select one Grand Prize winner and four regional winners.
- **Submission deadline August 1.**

Few awards in science are more rewarding than the *Science*/AAAS and GE Healthcare-sponsored prize – just ask the Grand Prize winner for 2007. In addition to having his essay published in *Science*, Matthew Stremlau received \$25,000, was flown to the awards ceremony in Stockholm, Sweden, and got to pick the brains of Nobel laureates Mario R. Capecchi, Sir Martin J. Evans and Oliver Smithies.\*\*

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Grand Prize winner Matthew Stremlau presents his research to a captivated audience



Prize winners with Nobel laureates Mario R. Capecchi, Sir Martin J. Evans and Oliver Smithies.

Established and presented by:



\* For the purpose of this prize, molecular biology is defined as "that part of biology which attempts to interpret biological events in terms of the physico-chemical properties of molecules in a cell" (*McGraw-Hill Dictionary of Scientific and Technical Terms, 4th Edition*).

\*\*Nobel Prize 2007 winners in Physiology or Medicine for their discoveries of principles for introducing specific gene modifications in mice by the use of embryonic stem cells.



## Electrophoresis



## Dig Deeper!

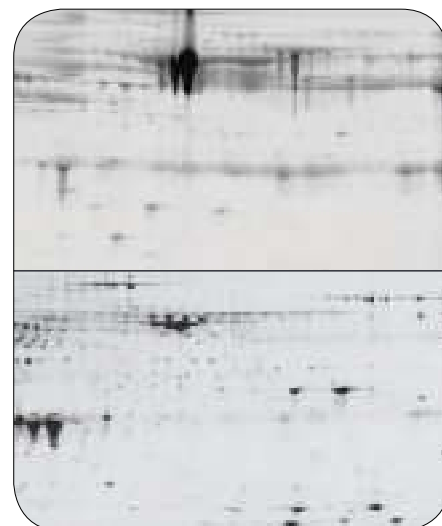
Uncover low-abundance proteins with Bio-Rad's new ProteoMiner™ protein enrichment kits.

ProteoMiner protein enrichment technology is a novel sample preparation tool for reducing the dynamic range of protein concentrations in complex biological samples. The presence of high-abundance proteins in biological samples (for example, albumin and IgG in serum or plasma) makes the detection of low-abundance proteins extremely challenging. ProteoMiner technology presents a method for overcoming this challenge.

- Decrease the amount of high-abundance proteins utilizing a combinatorial library of hexapeptides rather than immunodepletion to prevent co-depletion of low-abundance proteins
- Enrich and concentrate low-abundance proteins that cannot be detected through traditional methods

Whether you use one- or two-dimensional electrophoresis, chromatography, surface-enhanced laser desorption/ionization (SELDI), or another mass spectrometry technique, ProteoMiner kits enable enrichment and detection of low-abundance proteins.

Visit [www.bio-rad.com/ad/proteominer/](http://www.bio-rad.com/ad/proteominer/) for more information.

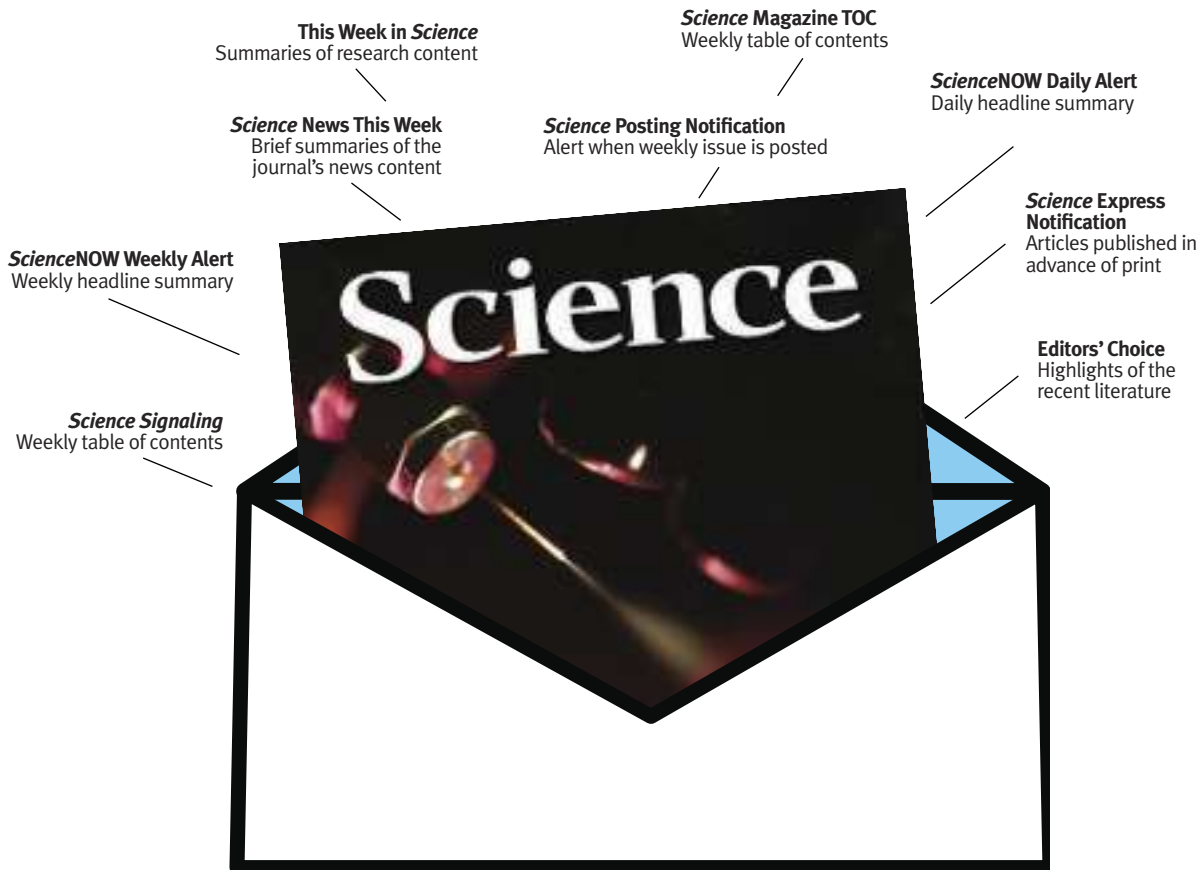


The ProteoMiner protein enrichment kit improves resolution and increases spot counts in two-dimensional gels. Top, untreated serum; bottom, serum sample treated with the ProteoMiner kit.

**FREE**  
with registration

# Science Alerts in Your Inbox

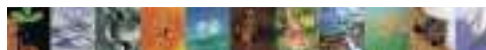
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some things are worth the wait.



## Competent Cells from New England Biolabs

### COMPLETING YOUR CLONING NEEDS

Make the switch to competent cells from New England Biolabs to help bring success to your research. Our expanded line of competent cells includes a variety of strains for cloning and expression, as well as strains with unique properties (see chart). For added convenience we offer a choice of efficiencies, formats and customized packaging. Now you can digest, ligate and transform with reagents from the name you trust.

#### Advantages:

- Extremely high transformation efficiencies
- Phage T1 resistance (*fhuA2*) preserves clone integrity
- Choice of protocols: high efficiency or 5 minute transformation
- Nonspecific endonuclease activity eliminated, resulting in highest quality plasmid preparations
- Express difficult or toxic proteins with T7 Express strains containing *lacI<sup>q</sup>* and/or a novel *lysY* variant
- Obtain colonies faster than any other commercial strain with NEB Turbo
- SOC Outgrowth Media and pUC19 Control Plasmid included
- Free of animal products

Cloning strain characteristics	Strain	NEB #
Obtain colonies faster than any other commercial strain (6.5 hours)	NEB Turbo Competent <i>E. coli</i> *	C2984H/I
Versatile cloning strain	NEB 5-alpha Competent <i>E. coli</i> †*	C2987H/I
Cloning of toxic genes	NEB 5-alpha F' <sup>l<sup>q</sup></sup> Competent <i>E. coli</i>	C2992H/I
Cloning of large plasmids and BACs	NEB 10-beta Competent <i>E. coli</i> *	C3019H/I
Growth of unmethylated plasmids	<i>dam<sup>-</sup>/dcm<sup>-</sup></i> Competent <i>E. coli</i>	C2925H/I

Expression strain characteristics	Strain	NEB #
Most popular non-T7 protein expression strain	NEB Express Competent <i>E. coli</i>	C2523H/I
Added control of IPTG induced expression with non-T7 plasmids	NEB Express I <sup>q</sup> Competent <i>E. coli</i>	C3037H/I
Most popular T7 protein expression strain	T7 Express Competent <i>E. coli</i>	C2566H/I
Reduced basal expression	T7 Express I <sup>q</sup> Competent <i>E. coli</i>	C3016H/I
Tight control of protein expression by inhibition of T7 RNA Polymerase	T7 Express <i>lysY</i> Competent <i>E. coli</i>	C3010H/I
Highest level of protein expression control	T7 Express <i>lysY</i> /I <sup>q</sup> Competent <i>E. coli</i>	C3013H/I
For crystallography experiments/SeMet labeling	T7 Express Crystal Competent <i>E. coli</i>	C3022H/I

† Available as subcloning efficiency

\* Available as electrocompetent cells

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Q What's the quickest link to advances in the world of science?

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- A special message to members from Alan Leshner, AAAS CEO
- Timely news on US and international AAAS initiatives
- Just-released reports and publications
- Future workshops and meetings
- Career-advancing information
- AAAS members-only benefits

[aaas.org/advances](http://aaas.org/advances)



**AAAS Advances**

Advances - The Monthly Newsletter for AAAS

**In this issue:**

- Message to Members:** Advancing Science Career
- News to Note:** New Officers, UN Climate Change Recordings, Blog, Family Science Days
- Advancing Science, Serving Society:** US R&D Fu
- Science Careers:** Four UK Events, Cancer Resea
- Announcements:** AAAS Forum on S&T Policy, G of interest and events

**Message to Members  
Advancing Science Careers Globally**

Dear AAAS Member,

To advance science, we must first advance the training and retention of a talented AAAS.

This year, we have initiated an even stronger set of some forty programs across the U.S. and Germany, Sweden and France. The Science Careers program is designed to add career skills to for management, peer review processes responsibilities. The courses, for you universities and during scientific con

Check the calendar of events planned for our entrepreneurial research and lab management in New York City: <http://sciencecareers.org>  
Find out more about our outreach program in the **Notes section** of the 29 September issue of this newsletter.

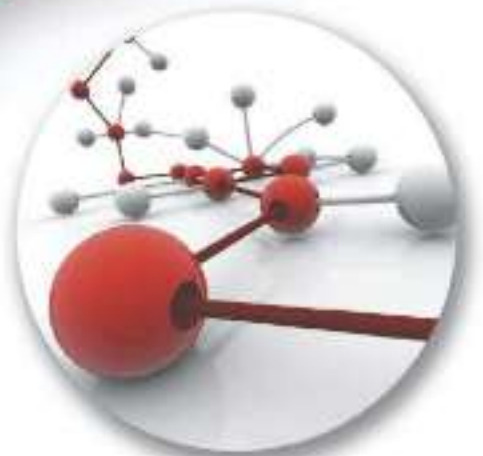
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ISSN: 1937-9145

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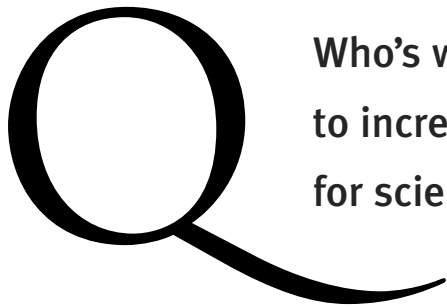
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Science Signaling

AAAS



## Who's working to increase support for science?



Top quality research depends on comprehensive support. AAAS is present at every stage of the process – from advising on funding policy initiatives to tracking the US Federal R&D budgeting process. As the experts, we brief Congressional staffers and representatives from

governments around the world. And only AAAS Funding Updates – sent out monthly – provide continual coverage of R&D appropriations. By actively working to increase support for research, AAAS advances science. To see how, go to [www.aaas.org/support](http://www.aaas.org/support)



ADVANCING SCIENCE, SERVING SOCIETY

## New Products



### High Throughput DNA/RNA Purification

The Clarity QSP system for synthetic RNA and DNA purification delivers nearly impurity-free, concentrated, full-length oligonucleotide sequences. Clarity QSP is offered in three cartridge formats and in 96-well plates. The cartridge formats are suitable for applications that require increased loading capacities, and can purify oligonucleotide samples in less than eight minutes using vacuum or positive pressure systems. The 96-well plate format can be easily automated for high throughput parallel purification and eliminates the tube-in-plate combination of other approaches. Clarity QSP overcomes the pitfalls of first generation trityl-on purification. The system's unique buffer works synergistically with ammonia-based deprotecting solutions to selectively retain the full-length trityl-on DNA or RNA sequence. The method eliminates subsequent wash steps and does not require toxic ion-pairing reagents. It delivers DNA at 90 percent to 95 percent purity, with recovery rates of more than 80 percent and RNA at 89 percent to 93 percent purity, with recovery rates of more than 75 percent.

[Phenomenex](#)

For information 310-212-0555

[www.phenomenex.com](http://www.phenomenex.com)

### cDNA Synthesis Kit

The SuperScript VIL0 cDNA Synthesis Kit, the latest in a family of reverse transcription kits, provides reliable and sensitive first-strand complementary DNA (cDNA). The kit features RNase-H–reduced SuperScript III Reverse Transcriptase, which generates increased yields of cDNA and improves quantitative polymerase chain reaction (qPCR) sensitivity up to fourfold over similar systems, according to the manufacturer. In addition, the new kit allows linear detection in a downstream qPCR reaction from as little as 1 picogram of starting RNA up to 2.5 micrograms in a 20-microliter reaction. The kit makes use of an enhanced reaction mix that includes a helper protein designed for minimizing qPCR inhibition, leading to improved detection.

[Invitrogen](#)

For information 800-955-6288

[www.invitrogen.com/vilo](http://www.invitrogen.com/vilo)

### Single Nucleotide Polymorphism Chips

The new Infinium HD BeadChip product line for DNA analysis features up to 2.3 million single nucleotide polymorphisms (SNPs) per BeadChip. The Human 1M-Duo BeadChip offers two samples per chip, and the Human610-Quad BeadChip offers four samples per chip. Both feature enhanced signal discrimination and a new SNP calling algorithm. The new BeadChips offer significant advances over previous products, including increased sample throughput, lower input sample volume, and improvements to the Infinium assay that enhance system performance. Both arrays on the Human 1M-Duo BeadChip contain markers for more than 1 million diverse genetic variants, all of which can be used for both whole-genome genotyping and copy number variation analysis. It includes recently identified disease-associated SNPs and intelligently selected high-density SNPs in coding regions of the genome. Built on the content of Illumina's broadly adopted HumanHap550 BeadChip, the Human610-Quad BeadChip has 550,000 SNPs plus an additional 60,000 genetic markers per sample.

[Illumina](#)

For information 800-809-4566

[www.illumina.com](http://www.illumina.com)

### Proteasome Inhibitors

The proteasome is a large barrel-like protein in the cytoplasm and nucleus of eukaryotic cells. The main function of the proteasome is to degrade unneeded and damaged proteins by proteolysis. The proteasomal degradation pathway is involved in many cellular processes including the cell cycle, gene expression, and responses

to oxidative stress. A variety of proteasome inhibitors are available for research in these areas.

[Tocris Bioscience](#)

For information 800-421-3701

[www.tocris.com](http://www.tocris.com)

### Monoclonal Antibody

Human glypican 3 (GPC3) is an oncofetal tumor antigen involved in growth regulation, cell division, and migration. The GPC3 Monoclonal Antibody (clone 1G12) can detect GPC3 in tissue by immunohistochemistry. Suitable for use on formalin-fixed, paraffin-embedded tissue sections, it is available in prediluted and concentrated form for manual use or in automated instruments.

[BioMosaics](#)

For information 802-656-5443

[www.biomosaics.com](http://www.biomosaics.com)

### Spill Detector

The OS\*250 system detects spills and leaks before they can cause a problem in an expensive microscope or other piece of equipment. As little as three drops of liquid cause the OS\*250 to react. The system consists of a control unit and moisture sensing mat made from a material specially developed for detecting spills. It is connected to the control unit by a simple connection cable. When liquid is detected on the sensing mat, the controller sounds an audible alarm, flashes an LED, and turns off the power of any device plugged into the single outlet, solid-state power controller. The spill sensor is supplied with the controller and four reusable 30 cm by 30 cm mats that can be cut to any size.

[KD Scientific](#)

For information 508-429-6809

[www.kdscientific.com](http://www.kdscientific.com)

Electronically submit your new product description or product literature information! Go to [www.sciencemag.org/products/newproducts.dtl](http://www.sciencemag.org/products/newproducts.dtl) for more information.

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### ChIP exactly as it should be: fast & simple.

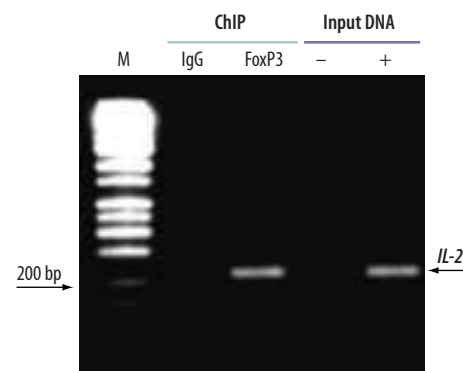
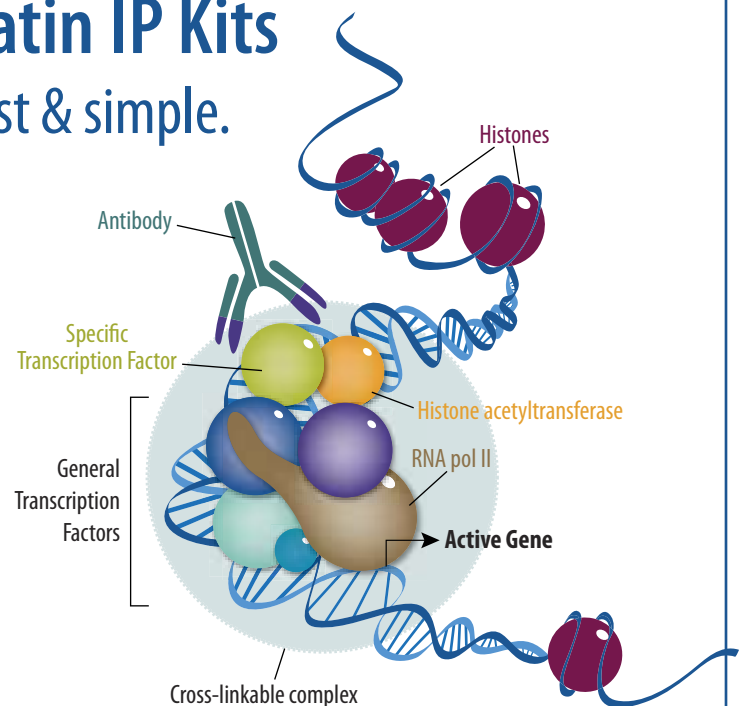
- ✓ Antibodies provided have been qualified to work for ChIP
- ✓ A negative control antibody is included with each kit
- ✓ Positive control primer set included with each kit provides confidence in the experimental results obtained
- ✓ Fast, consistent results can be obtained in 4 to 5 hours

### ExactaChIP Chromatin IP Kits

TRANSCRIPTION FACTOR	SPECIES	CONTROL PRIMERS	CATALOG #
β-Catenin	H	SUZ12	ECP1329
c-Myc	H	p21	ECP3696
CREB	H	Fos	ECP2989
FoxP3	H	IL-2	ECP3240
GATA-4	H	MUC4	ECP2606
GATA-5	H	MUC4	ECP2170
GATA-6	H	MUC4	ECP1700
GLI-1	H	Bcl-2	ECP3324
GLI-2	H	Bcl-2	ECP3526
GLI-3	H	GLI-1	ECP3690
HIF-1α	H M	Erythropoietin, VEGF	ECP1935
KLF4	H M	B2R	ECP3640, ECP3158
Nanog	H	Nanog	ECP1997
Oct-3/4	H	Nanog	ECP1759
p53	H	p21	ECP1355
p300	H	Fos	ECP3789
Smad4	H	p21	ECP2097
SOX2	H	Nanog	ECP2018
STAT3	H M	c-Myc	ECP1799
STAT5	H M	Bcl-x	ECP2168

Key: H Human M Mouse

For research use only. Not for use in diagnostic procedures.



The FoxP3 ExactaChIP™ Chromatin IP Kit (Catalog # ECP3240) was used to detect FoxP3 binding sites in human Jurkat leukemic T cells stimulated with PMA + ionomycin. After incubation with biotinylated anti-human FoxP3 or biotinylated anti-goat IgG polyclonal antibodies, the *IL-2* promoter was detected by standard PCR using primers targeting the *IL-2* promoter. M=DNA marker; input = total DNA before IP.

For more information visit our website at [www.RnDSystems.com/go/ExactaChIP](http://www.RnDSystems.com/go/ExactaChIP)

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