Beyond Biomarkers
Keep your focus on the next stage. Our rigorously tested and limitation-lifting immunoassay platforms provide you with all the AssayAbilities to take your biomarker research further.
Beyond Biomarkers

We are committed to delivering the best possible immunoassays for your research needs. Whether you are using our industry-leading MILLIPLEX® multiplex panels to broadly survey multiple analytes, performing femtogram/mL biomarker analysis using the Single Molecule Counting (SMC®) ultrasensitive immunoassay platform, or examining single proteins with our tried-and-true ELISAs and RIAs, you can confidently expect reliable measurements, a simplified user experience, and knowledgeable scientific partners to help drive your biomarker project from hypothesis to publication.

**Designed RelyAbility**
Our Conferma® ELISAs are engineered for endogenous detection and lot-to-lot consistency of routine-use biomarkers to keep your data reproducible, run after run.

**Genuine plexAbility**
Our industry-leading MILLIPLEX® multiplex assays for the Luminex® platform give you the FlexAbility to select your combination of biomarkers to simultaneously analyze with ease.

**Next-Level DetectAbility**
Our ultrasensitive Single Molecule Counting (SMC®) kits for the SMCxPRO® platform take your research to the next level by detecting biomarkers down to fg/mL levels.

**Complete CompareAbility**
Our Belysa® Immunoassay Curve Fitting Software helps you quickly compare your standard and sample curves with ease, confirming that your methods and plates ran consistently.

**Expert CustomAbility**
Our Custom Assay Development & Innovation (CADI) team of experienced scientists partner with you to develop custom immunoassays for your biomarker(s) of interest, accelerating your projects from discovery to clinical trials.

Keep your focus on the next stage.
## Immunoassays at a Glance

<table>
<thead>
<tr>
<th>Species</th>
<th>MILLIPLEX® Multiplex Assays</th>
<th>Single Molecule Counting (SMC®) Assays</th>
<th>ELISAs</th>
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<th>Kit Format</th>
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<td>Bulk Premixed (Space Saver)*</td>
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*only applies to MILLIPLEX® kits
**Conferma® ELISAs only

---

SigmaAldrich.com/immunoassays
## New Immunoassay Products

### New Kits

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<tr>
<th>Description</th>
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<tbody>
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<td><strong>MILLIPLEX® Panels</strong></td>
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<td>BAPP1-150K</td>
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<td>HCYTPAB-76SK</td>
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<td>Panel A + B Combo Pack 96-Plex</td>
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<td><strong>SMC® Kits</strong></td>
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### Coming Soon

<table>
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<td><strong>MILLIPLEX® Panels</strong></td>
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<td>Exosome Characterization Panel</td>
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<td>PLEXpedition Screening Panel</td>
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<td>Neurodegenerative Autoantibody Panel</td>
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<td>pTau 231 High Sensitivity Immunoassay Kit</td>
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</table>

**Spark New Research Ideas with Neuroinflammation Biomarker Assays**

Did you know neuroinflammation plays a key role in the chronic processes of neurodegenerative diseases? MILLIPLEX® immunology/inflammatory biomarker panels and SMC® high sensitivity kits enable researchers to analyze serum, plasma, or cerebral spinal fluid samples for biomarkers in advance of neurodegenerative disease onset, during chronic disease, and when exploring potential therapeutics.

See how you can fire up your research at SigmaAldrich.com/neuroinflammation
Single Molecule Counting (SMC®) Technology

Reduced background + increased signal

SMC® technology provides maximum immunoassay performance while following a workflow similar to traditional ELISA technology, as shown below. By combining a unique assay elution step and robust digital counting, SMC® technology achieves improved signal-to-noise ratios over traditional immunoassay technologies. The SMC® technology thus provides enhanced quantification at both low and high levels of expression on one complete system.

**Digital counting improves sensitivity and dynamic range**

The SMCxPRO® instrument captures the sum of all digital events counted above the background threshold. The algorithm of the SMCxPRO® instrument computes digital events across a spectrum of time series for a single standard. The digital counting of molecules thus improves the assay sensitivity and extends the assay dynamic range beyond what can be achieved with traditional methods.

**What Is Single Molecule Counting (SMC®) Technology?**

Satisfy your curiosity by visiting SigmaAldrich.com/smc-learn
## SMC® Immunoassay Kits

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Cat. No.</th>
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<th>Species2</th>
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1 LLOQ: Lowest point on standard curve with CV < 20% and accuracy within 20% of expected values. 2 Optimized for first species type listed. Other listed species have been tested, but not optimized for peak performance. Key: H=Human; M=Mouse; R=Rat; GP=Guinea Pig; Cy=Cynomolgus Monkey; C=Canine. 3 Optimized for use in sample type(s) listed. Key: P=Plasma; S=Serum; L=Lysate; U=Urine; C=Cerebrospinal Fluid (CSF). 4 Inquire with technical support. 5 Plate-based assay. 6 Qualitative assay.
Empower Your Biomarker Research

Ultrasonic Detection with the SMCxPRO® Immunoassay System

- Ultrasensitive detection down to femtogram/mL
- Lightweight (22.7 kg/50 lbs), fluidics-free benchtop instrument
- Results in hours (average assay time of ~4.5 hours and read time ~45 min)
- More than 40 SMC® assays available from a growing menu
- Bead-based and plate-based assays available
- Custom assay services and sample testing options
- Cat. No. 95-0100-00

Assay Performance and Instrument Specifications

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<td>Precision</td>
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<td>Background</td>
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Three Levels of Onsite Service Support for SMCxPRO® Platform

- **Total Service:** Unlimited visits including labor, travel, expenses, and all parts for any service for one year
- **Advanced Service:** Labor, travel, and expenses for one preventative maintenance and one floating visit for one year
- **Essential Service:** Labor for one preventative maintenance visit for one year
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- MILLIPEX® PANELS
- MILLIPEX® FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
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HUMAN

Immunology

Human Cytokine/Chemokine/ Growth Factor Panel A
1. sCD40L
2. EGF
3. Eotaxin/CCL11
4. FGF-2/FGF-basic
5. Flt3 Ligand
6. Fractalkine/CX3CL1
7. G-CSF
8. GM-CSF
9. GR0s
10. IFNα2
11. IFNγ
12. IL-1α
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5. CCL28
6. sCD137/4-1BB/TNFRSF9
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18. IL-11
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24. TNFα

Human High Sensitivity T Cell
1. (Cat. No. HSTC384-28K)
2. (Cat. No. HSTC384-PX21)
3. (Bulk Cat. No. HSTCM384PKX21BK)

384-Well Human High Sensitivity T Cell
1. Fractalkine/CX3CL1
2. GM-CSF
3. IFNγ
4. IL-1β
5. IL-2
6. IL-4
7. IL-7
8. TNFα

Human Th17
1. (Cat. No. HT17MAG-14K)
2. (Cat. No. HT17MAG-14K-PX25)
3. (Bulk Cat. No. HT17MAG14PMX25BK)

Human CD8+ T Cell
1. (Cat. No. HCD8MAG-15K)
2. (Cat. No. HCD8MAG15K17PMX)
3. (Bulk Cat. No. HCD8MAG15K17PKX17BK)

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76-Plex (Two 38-plex premixed kits)
Cat. No. HCYTAPB-76SK

96-Plex (Two 48-plex premixed kits)
Cat. No. HCYTAPB-96SK

Kits cannot be combined.

MILLIPLEX® Immunology Kits
Profile more immune biomarkers faster with MILLIPLEX® multiplex immunoassays.
Learn more at SigmaAldrich.com/milliplex-immunology

Legend key for MILLIPLEX® kits

1. Analytes which cannot beplexed together:
   - - Active and total
   - Available in Cat. No. listed
   - Premix panel only
   - Bulk indicates Space Saver Packaging
   - These analytes cannot beplexed with other analytes in this panel in serum/plasma
2. Requires a protease inhibitor during sample collection
3. Requires sample extraction
4. **No standard/QC; antibody levels are reported as MFI5 (Median Fluorescence Intensities)
5. Serum/Plasma only
6. Tissue Culture samples only
7. Competition assay format
8. Available for custom premix
9. Analyte requires a different sample dilution from others in panel
10. Analyte cannot be measured in serum
11. Requires sample acidification
12. Analyte cannot be measured in plasma
13. Urine only

SigmaAldrich.com/milliplex
Human Interferon

(Cat. No. HIFN-130K)

IFNα2
IFNβ
IFNγ
IFNγ Receptor 1

(Cat. No. HIFN-130K-PMX9)

IFNy
IFNy Receptor 1 (IFNGR1)

IFNε
IFNω
IL-28A/IFNλ2
IL-28B/IFNλ3
IL-29/IFNλ1

Human Soluble Cytokine Receptor

(Cat. No. HSCRMAG-32K)

(sCD30)
(sEGFR/sHER1/ErbB1)
(sGP130)
(sIL-1RI)
(sIL-1RII)
(sIL-2Rα)
(sIL-4R)

(sIL-6R)
(sRAGE)
(sTNF RI)
(sTNF RII)
(sVEGFR1 / sFlt-1)
(sVEGFR2 / sKDR / sFlk-1)
(sVEGFR3 / sFlt-4)

Human Cytokine/Chemokine Panel II

(Cat. No. HCP2MAG-62K)

(Exodus-2)
(BCA-1/CXCL13)

(CTACK/CCL7)
(ENA-78/CXCL5)

(Eotaxin-2/CCL24/ MCPIF-2)
(Eotaxin-3/CCL26)

(1-309/CCL1)
(IL-16)
(IL-20)
(IL-21)
(IL-23)

(Human Cytokine/Chemokine Panel III)

(Cat. No. HCYP3MAG-63K)

(HCC-1/CCL14)

(IL-11)
(IL-29/IFNA1)
(I-TAC/CXCL11)

(Lymphotactin/XCL1)

Human Cytokine/Chemokine Panel IV

(Cat. No. HCYP4MAG-64K)

(BAFF/Blys)
(BRAK/CXCL14)

(CCL28)
(CXCL16)

(HCC-4/CCL16)
(HMGB1)

(IL-14/o-Taxilin)

(IL-16)
(IL-20)
(IL-21)
(IL-23)

(IL-28A/IFNλ2)
(IL-33/NF-HEV (mature))

(LIF)
(MCP-2/CCL8)
(MCP-4/CCL13)
(MIP-10/MIP-5/CCL15)
(SCF)
(SDF-1/CXCL12)
(TARC/CCL17)
(TPO)

(TRL/IFNRF10)
(TSLP)

Human IL-18 Singleplex

(Cat. No. HIL18MAG-66K)

IL-18

Human Complement Expanded Panel 1

(Cat. No. HCMPEX1-19K)

(Adipsin/Factor D)
(C2)
(C4b)
(C5)
(C5a)
(C9)

(Factor I)
(Mannose-Binding Lectin (MBL))

(Peroxidase)

Human Complement Expanded Panel 2

(Cat. No. HCYP2MAG-19K)

(C1q)
(C4)
(C4b)

(C5)

(C5a)

Human Complement C5b-9 Singleplex

(Cat. No. HC5B9-140K)

(C1q)
(C4)
(C4b)

(C5)

(C5a)

Human MMP Panel 1

(Cat. No. HMMP1MAG-55K)

(MMP-3)
(MMP-13)

(MMP-12)

Human MMP Panel 2

(Cat. No. HMMP2MAG-55K)

(MMP-1)
(MMP-9)

(MMP-2)
(MMP-10)

(MMP-7)

Human TIMP Panel 1

(Serum/Plasma samples)

(Cat. No. HTMP1MAG-54K)

(TIMP-1)
(TIMP-3)

(TIMP-2)
(TIMP-4)

Human TIMP Panel 2

(Cell culture samples)

(Cat. No. HTMP2MAG-54K)

(TIMP-1)
(TIMP-3)

(TIMP-2)
(TIMP-4)

Human Fibrosis Panel 1

(Cat. No. HFB1-100K)

COMP

(Uteroglobin)

IL-18BP

Human Autoimmune Autoantibody **

(Cat. No. HAIAB-10K)

(QUALITATIVE KIT)

(β2-Glycoprotein)
(C1q)
(CENP-A)
(CENP-B)
(Jo-1)
(Ku)
(Mi-2)
(Myeloperoxidase (MPO))
(PCNA)

(Pl-12 (Alanyl-tRNA Synthetase))

Human Cytokine Autoantibody Expanded IgG, IgA, and IgM **

(IgG (Cat. No. HCYTABG-17K))

(IgA (Cat. No. HCYTABA-17K))

(IgM (Cat. No. HCYTABM-17K))

(QUALITATIVE KIT)

(BAFF/Blys)
(G-CSF)
(GM-CSF)
(IFNα2)
(IFNβ)
(IFNω)

(IL-1α)
(IL-2)
(IL-3)

(IL-4)
(IL-5)

(PF4)
(TNFα)

Human Sepsis Panel 1

(Cat. No. HSP1MAG-63K)

(sFAS / TNFRSF6)

(sFasL)

(sICAM-1)

(MIF)

(PI-1 (total))

(sICAM-1)

(sICAM-1)

Human TIMP Panel 1

(Serum/Plasma samples)

(Cat. No. HTMP1MAG-54K)

(TIMP-1)
(TIMP-3)

(TIMP-2)
(TIMP-4)

Human Fibrosis Panel 1

(Cat. No. HFB1-100K)

COMP

(Uteroglobin)

IL-18BP

Immune Response

Human Autoimmune Autoantibody **

(Cat. No. HAIAB-10K)

(QUALITATIVE KIT)

(β2-Glycoprotein)
(C1q)
(CENP-A)
(CENP-B)
(Jo-1)
(Ku)
(Mi-2)
(Myeloperoxidase (MPO))
(PCNA)

(Pl-12 (Alanyl-tRNA Synthetase))

Human Cytokine Autoantibody Expanded IgG, IgA, and IgM **

(IgG (Cat. No. HCYTABG-17K))

(IgA (Cat. No. HCYTABA-17K))

(IgM (Cat. No. HCYTABM-17K))

(QUALITATIVE KIT)

(BAFF/Blys)
(G-CSF)
(GM-CSF)
(IFNα2)
(IFNβ)
(IFNω)

(IL-1α)
(IL-2)

(IL-3)
(IL-4)

(TNFα)

Human Cytokine/Chemokine Panel II

(Cat. No. HCP2MAG-62K)

(Exodus-2)

(BCA-1/CXCL13)

(CTACK/CCL7)

(ENA-78/CXCL5)

(Eotaxin-2/CCL24/ MCPIF-2)

(Eotaxin-3/CCL26)

(I-309/CCL1)

(IL-16)

(IL-20)

(IL-21)

(IL-23)

Human Cytokine/Chemokine Panel III

(Cat. No. HCYP3MAG-63K)

(HCC-1/CCL14)

(IL-11)

(IL-29/IFNA1)

(I-TAC/CXCL11)

(Lymphotactin/XCL1)

MILLIPLEX® Autoantibody Profiling

Discover the benefits of multiplexing autoantibodies at SigmaAldrich.com/milliplex-autoab
Human Sepsis Panel 2
(Cat. No. HSP2MAG-63K)
Granulysin B  MIP-1α/CCL3
HSP70  MIP-1β/CCL4
IL-1α  MMP-8
IL-8/CXCL8

Human Sepsis Panel 3
(Cat. No. HSP3MAG-63K)
Lactotransferrin (LTF)  Resistin
Neutrophil Elastase-2  Thrombospondin-1
NGAL/Lipocalin-2

Human Immunoglobulin Isotyping
(Cat. No. HGAMMAG-301K)
IgA  IgG3
IgG1  IgG4
IgG2  IgM

Human IgE – Singleplex
(Cat. No. HGAMMAG-303E)
IgE

Virology
SARS-CoV-2 Antigen Panel 1
(Cat. No. HC19SERA1-85K)
SARS-CoV-2 N  SARS-CoV-2 Spike S1
SARS-CoV-2 RBD  SARS-CoV-2 Spike S2

SARS-CoV-2 Antigen Panel 1
(Cat. No. HC19SERRG1-85K)
SARS-CoV-2 N  SARS-CoV-2 Spike S1
SARS-CoV-2 RBD  SARS-CoV-2 Spike S2

SARS-CoV-2 Antigen Panel 1
(Cat. No. HC19SERM1-85K)
SARS-CoV-2 N  SARS-CoV-2 Spike S1
SARS-CoV-2 RBD  SARS-CoV-2 Spike S2

For Research Use Only. Not For Use In Diagnostic Procedures.

Metabolism/ Endocrinology
Human Adipokine Panel 1
(Serum/Plasma samples)
(Cat. No. HADK1MAG-61K)
Adiponectin  PAI-1 (total)
Adipin/Factor D  Resistin
NGAL/Lipocalin-2

Human Adipokine Panel 2
(Serum/Plasma samples)
(Cat. No. HADK2MAG-61K)
IL-1β  Leptin
IL-6  MCP-1/CCL2
IL-8/CXCL8  NGF
Insulin  TNFα

Human Metabolic Hormone V3
(Cat. No. HMMH3-34K)
Amylin (active)  Insulin
Amylin (total)  Leptin
C-Peptide  MCP-1/CCL2
Ghrelin (active)  Pancreatic Polypeptide (PP)
GIP (total)  Glycyrrhetinic acid (PP)
GLP-1 (active)  PYY (total)
GLP-1 (total)  Secretin
Glucagon  TNFα
IL-6

Human Myokine
(Cat. No. HMYOMAG-56K)
Apolin  IL-15
BDNF  Irisin
Erythropoietin (EPO)  ILF
FABP3  Myostatin/GDF8
FGF-21  Oncostatin-M (OSM)
Fractalkine/CX3CL1  Oncostatin-M (OSTN)/Muslin
FSTL1  Osteonectin/SPARC

Human Aging Panel 1
(Cat. No. HAGE1MAG-20K)
CTACK/CCL27  IL-6
FGF-21  IL-10•
GF-11  IL-18
GDF15  Jag1
GnRH  Leptin

Human Liver Protein
(Cat. No. HLPPMAG-57K)
α-Fetoprotein (AFP)  FGF-19
ANGPTL3  FGF-21
ANGPTL4  FGF-23
ANGPTL6  HGF
FABP

Human IGF Binding Protein
(Cat. No. HIGFBMAG-53K)
IGFBP1  IGFBP5
IGFBP2  IGFBP6
IGFBP3  IGFBP7
IGFBP4

Human IGF
(Cat. No. HIGFMAG-52K)
IGF-1  IGF-2

Human Pituitary Panel 1
(Cat. No. HPTP1MAG-66K)
ACTH  FSH
Agouti-Related Protein (AgRP)  GH
CNTF  LH

Cardiovascular
Human CVD Panel 1
(Cat. No. HCVDMAG-67K)
BNP  LIGHT
CK-MB  NT proBNP
CXCL6/GCP-2  Oncostatin-M (OSM)
CXCL16  Placental Growth Factor (PlGF)
Endocan-1 (ESM-1)  Troponin I (TnI)
FABP3  FABP4

Human CVD Panel 2
(Cat. No. HCVD2MAG-67K)
ADAMTS13  Myoglobin
D-dimer  NGAL/Lipocalin-2
GDF15  sP-Selectin
sICAM-1  Serum Amyloid A
Myeloperoxidase  sVCAM-1

Legend key for MILLIPLEX® kits
†  Analytes which cannot be plexed together:
- Active and total
- Free and total
Available in Cat. No. listed
Premix panel only
Bulk indicates Space Saver Packaging
▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
★ Requires a protease inhibitor during sample collection
■ Requires sample extraction
** No standard/QC; antibody levels are reported as MFIs (Median Fluorescence Intensities)
• Serum/Plasma only
♦ Tissue Culture samples only
▲ Competitive assay format
□ Available for custom premix
▲ Analyte requires a different sample dilution from others in panel
© Analyte cannot be measured in serum
# Requires sample acidification
♦ Analyte cannot be measured in plasma
u Urine only
Human CVD Panel 3 (Acute Phase) (Cat. No. HCVD3MAG-67K)
- a-1-Acid Glycoprotein (AGP)
- a-2-Macroglobulin
- Adipsin/Factor D
- CRP
- Fetuin A
- Fibrinogen

Human CVD Panel 4 (Cat. No. HCVD4MAG-67K)
- sCD31/sPECAM-1
- sE-Selectin
- Follistatin (FST)
- Pentraxin-3 (PTX3)

Human CVD Panel 6 (Cat. No. HCVD6MAG-67K)
- sCD14
- DPP4
- Endostatin
- LRG1

Human Apolipoprotein (Cat. No. APMAG-62K)
- Apo A1
- Apo AII
- Apo B
- Apo C

Bone
Human Bone (Cat. No. HBNMAG-51K)
- ACTH
- DKK1
- FGF-23
- IL-1β
- IL-6
- Insulin
- Leptin

Human RANKL – Singleplex (Cat. No. HRNKLMAAG-51K-01)
- RANKL

Cancer
Human Immuno-Oncology Checkpoint Protein Panel 1 (Cat. No. HCKP1-11K)
- α-1-Acid Glycoprotein (AGP)
- α-2-Macroglobulin
- Platelet Factor 4 (PF4)/CXCL4
- Serum Amyloid P (SAP)
- Haptoglobin
- sl-Selectin
- Platelet Factor 4 (PF4)/CXCL4
- Serum Amyloid P (SAP)

Human Immuno-Oncology Checkpoint Protein Panel 2 (Cat. No. HCKP2-11K)
- 4-1BB/4-1BBL
- 4-1BBL/4-1BBL
- 5′-NT/CDT3
- APRIL
- Arginase-1
- B7-H2/ICOSL
- B7-H3/CD276
- B7-H4/VCTN1
- B7-H5/VISTA
- B7-H6
- BAFF/BlyS
- CD25/IL-2Rα
- CD30/TNFRSF8
- CD40L
- CD137/4-1BB
- CD226/DNAM-1
- E-Cadherin

Human Immuno-Oncology Checkpoint Protein Panel 3 (Cat. No. HCKP3-11K-PXBK17)
- α-Fetoprotein (AFP)
- CA125
- CA15-3
- CA19-9
- CEA
- CYP1A1
- sFAS/TNFRSF6
- sFasL
- FGF-2/FGF-basic
- TGFα
- IL-8/CXCL8

Human Immuno-Oncology Checkpoint Protein Panel 4 (Cat. No. HCKP4-11K)
- Cathepsin D
- Fibroblast Activation Protein (FAP)
- Galectin-3
- IGFBP3 ◦
- Melanoma Inhibitory Activity (MIA)
- Myeloperoxidase (MPO)
- Nectin-2
- Nectin-4
- Osteonectin/SPARC
- Osteoprotegerin (OPG)

Human Cancer Autoantibody** (Cat. No. HCABMAG-13K)
- CCNB1/Cyclin B1
- CTAG1B/NY-ESO-1
- ENO1
- Galactin-1 (GAL1)
- Galactin-3 (GAL3)
- HER2/neu
- HIF-1α
- HSPA6

Human Circulating Cancer Biomarker Panel 1 (Cat. No. HCCB1MAG-58K)
- α-Fetoprotein (AFP)
- CA125
- CA15-3
- CA19-9
- CEA
- CYP1A1
- sFAS/TNFRSF6
- sFasL
- FGF-2/FGF-basic
- TGFα
- IL-8/CXCL8

Human Circulating Cancer Biomarker Panel 2 (Cat. No. HCCB2MAG-58K)
- ACTH
- DKK1
- GDF15
- Neuron-specific Enolase (NSE)
- Osteonectin/SPARC
- Periostin
- TRAP5
- YKL40/CHI3L1

Human Circulating Cancer Biomarker Panel 3 (Cat. No. HCCB3MAG-58K)
- Cathepsin D
- Fibroblast Activation Protein (FAP)
- Galectin-3
- IGFBP3 ◦
- Melanoma Inhibitory Activity (MIA)
- Myeloperoxidase (MPO)
- Sex Hormone Binding Globulin (SHBG)

Human Circulating Cancer Biomarker Panel 4 (Cat. No. HCCB4MAG-58K)
- ALDH1A1
- Carbonic Anhydrase 9 (CA9)
- EpCAM
- Hepsin
- Kallikrein-6
- Mesothelin
- NCAM1/L1CAM/CD171
- Transglutaminase 2 (TG2)

Human Cancer/Metastasis Biomarker Panel 1 (Cat. No. HCMBMAG-22K)
- DKK1
- GDF15
- Neuron-specific Enolase (NSE)
- Osteonectin/SPARC
- Osteoprotegerin (OPG)

Human Angiogenesis/Growth Factor Panel 1 (Cat. No. HAGPMAG-12K)
- Angiopoietin-2
- BMP-4
- Endoglin
- Endothelin-1
- FGF-1/FGF-acidic
- FGF-2/FGF-basic
- Follistatin (FST)
- G-CSF
- HB-EFG
- IL-8/CXCL8
- IL-1β
- IL-6
- Prolactin
- PSA (total)†
- SCF
- TGFα
- TRAIL/TNFSF10
- VEG-F

MILLIPLEX® Cancer Kits
See how our kits are advancing cancer and immuno-oncology research at SigmaAldrich.com/milliplex-cancer
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<thead>
<tr>
<th>Analyte</th>
<th>Symbol</th>
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<td>Angiotatin/Kringle</td>
<td>sAXL</td>
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<td>sCD31/sPECAM-1</td>
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<td>sc-Ki/ls Stem Cell Factor Receptor</td>
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</tr>
<tr>
<td>Melatonin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explore Biomarkers for Alzheimer’s Disease Research</td>
<td></td>
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</tr>
<tr>
<td>Learn how to combine multiplex and high sensitivity assay analysis for AD biomarker studies at SigmaAldrich.com/immunoassays-AD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PRIMATE

Immunology

Non-Human Primate Cytokine/Chemokine /Growth Factor Panel A
(Cat. No. PRCYA-40K)
(Cat. No. PRCYA-40K-PX38)
(Cat. No. PRCYA-40K-BK38)
(Cat. No. PRCYA-40K-PX48)
(Cat. No. PRCYA-40K-BK48)

MOUSE

Immunology

Mouse Cytokine/Chemokine Panel 1
(Cat. No. MCYTMAG-70K)
(Cat. No. MCYTMAG-70K-PMX)
(Bulk Cat. No. MCYTMAG70PMX25BK)
(Cat. No. MCYTMAG70-PX32)
(Bulk Cat. No. MCYTMAG70PMX32BK)

Mouse Cytokine/Chemokine Panel 2
(Cat. No. MEYCMAG-73K)
(Bulk Cat. No. MEYCMAG73KPKX)

Mouse High Sensitivity T Cell
(Cat. No. MHSTCMAG-70K)
(Bulk Cat. No. MHSTCMAG-70KPMX)

Mouse MMP Panel 1
(Serum/Plasma samples)
(Cat. No. MMP1MAG-79K)

Mouse MMP Panel 2
(Serum/Plasma samples)
(Cat. No. MMP2MAG-79K)

Non-Human Primate Metabolic Hormone
(Cat. No. NHMMHMMAG-45K)

Amylin (active)
C-Peptide
Ghrelin (active)
GIP (total)
GLP-1 (active)
Glucagon
IL-6

Non-Human Primate Pituitary Panel 1
(Cat. No. NHPPT1MG-46K)

ACTH
Agouti-Related Protein (AgRP)
CNTF
FSH
GH
LH
TSH

Non-Human Primate Cytokine Analysis
Save time and sample with the largest bead-based non-human primate multiplex assay on the market.

Read more at SigmaAldrich.com/milliplex-primate
**Mouse MMP Panel 3**  
(Cat. No. MMMP3MAG-79K)

| MMP-2 | proMMP-9 |
| MMP-3 | MMP-12 |
| MMP-8 |

**Immune Response**

**Mouse Immunoglobulin Isotyping**

| 2 | (Cat. No. MGAMMAG-300K) |
| IgA | IgG2b |
| IgG1 | IgG3 |
| IgG2a | IgM |

**Metabolism/Endocrinology**

**Mouse Adipokine**  
(Serum/Plasma samples)  
(Cat. No. MADKIMAG-71K)

| IL-6 | PAI-1 (total) |
| Inulin | Resistin |
| Leptin | TNFα |
| MCP-1/CCL2 |

**Mouse Adipocyte**  
(Cell culture samples)  
(Cat. No. MADCYMAG-72K)

| Adiponectin | PAI-1 (total) |
| IL-6 | Resistin |
| Leptin | TNFα |
| MCP-1/CCL2 |

**Mouse Adiponectin – Singleplex**  
(Serum/Plasma samples)  
(Cat. No. MADPNMAG-70K-01)

| Adiponectin |

**Mouse Metabolic Hormone Expanded**  
(Cat. No. MMHE-44K)

| Amylin (active) | Leptin |
| C-Peptide 2 | MCP-1/CCL2 |
| Ghrelin (active) | Pancreatic Polypeptide (PP) |
| GIP (total) | GLP-1 (active) |
| GLP-1 (total) | Resistin |
| Glucagon | Secretin |
| IL-6 | TNFα |
| Insulin |

**Mouse Myokine**  
(Cat. No. MMYOMAG-74K)

| BDNF | Irisin |
| Erythropoietin (EPO) | LIF |
| FGF-21 | Myostatin/GDF8 |
| Follistatin-like Protein 1 (FSTL1) | Oncostatin-M (OSM) |
| IL-6 | Osteocrin (OSTN)/Musclin |
| IL-15 | Osteonectin/SPARC |

**Mouse Aging Panel 1**  
(Cat. No. MAGE1MAG-25K)

| CTACK/CCL27 | Jag1 |
| FGF-21 | Leptin |
| GnrH | Notch1 |
| IL-6 | TNFα |

**Mouse Pituitary**  
(Cat. No. MPTMAG-49K)

| ACTH | LH |
| BDNF | Prolactin |
| FSH | TSH |
| GH |

**Cardiovascular**

**Mouse CVD Panel 1**  
(Cat. No. MCVD1MAG-77K)

| sCD11/sPECAM-1 | ProMMP-9 |
| sE-Selectin | sP-Selectin |
| sCAM-1 | Thrombomodulin |
| PAI-1 (total) |

**Mouse CVD Panel 2**  
(Cat. No. MCVD2MAG-77K)

| sCD40L | Oncostatin M (OSM) |
| CXCL16 | Placental Growth Factor 2 |
| Endocan-1 (ESM-1) | Follistatin (FST) |
| LIGHT | Troponin I (TnI) |
| Troponin T (TnT) |

**Mouse Acute Phase Panel 2**  
(Cat. No. MAPMAG-76K)

| α-1-Acid Glycoprotein (AGP) | CRP |
| α-2-Macroglobulin | Haptoglobin |
| Adipsin/Factor D | Serum Amyloid P (SAP) |

**Cancer**

**Mouse Angiogenesis / Growth Factor Panel 1**  
(Cat. No. MAGPMAG-24K)

| sALK-1 | IL-6 |
| Amphiaregulin | IL-17A/CTLA8 |
| Angiopoietin-2 | KC/GRO/CINC-1/CXCL1 |
| Betacellulin | Leptin |
| sCD31/sPECAM-1 | EGF |
| Endoglin | MCP-1/CCL2 |
| Endothelin-1 | MIP-1α/CCL3 |
| sFasL | Placental Growth Factor 2 |
| Follistatin (FST) | Prolactin |
| G-CSF | SDF-1/CXCL12 |
| HGF | TNFα |
| IL-1β | VEGF-A |
| TNFα | VEGF-C |
| VEGF-D |

**Mouse Immuno-Oncology Checkpoint Protein Panel 1**

| 2 | (Cat. No. MCKP1-110K) |
| 2 | (Cat. No. MCKP1-110K-PK28) |
| (Bulk Cat No. MCKP1-110K-PB28) |

| 4-1BB/LNFS9 | Galectin-1 |
| 5'-NT/CD73 | Galectin-3 |
| B7-H2/ICOSL | GITR |
| B7-1/CD276 | Granulocyte B |
| BCA-1/CXCL13 | HVEM |
| BTLA | IFNγ |
| CD137/4-1BB | IL-10 |
| CD226/DNAM-1 | LAG-3 |
| CD25/IL-2ra | PD-1 |
| CD27 | PD-L1 |
| CD40 | PD-L2 |
| CD80/87-1 | TIM-3 |
| CTLA-4/CD152 | TLR-2 |
| E-Cadherin | TNFα |

**Neuroscience**

**Mouse Amyloid Beta**  
(Cat. No. MABMAG-83K)

| Amyloid beta 1-40 | Amyloid beta 1-42 |

**Mouse Neuropeptide**  
(Cat. No. RMNMAG-83K)

| α-MSH | Oxytocin |
| β-Endorphin | Substance P |
| Neurotensin |

---

**Legend key for MILLIPLEX® kits**

- † Analytes which cannot be plexed together:  
  - Active and total  
  - Free and total  
  - Available in Cat. No. listed  
  - Premix panel only  
  - Bulk indicates Space Saver Packaging  
  ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma  
  ■ Requires a protease inhibitor during sample collection  
  □ Requires sample extraction  
  * No standard/QC; antibody levels are reported as MFIs (Median Fluorescence Intensities)  
  ♦ Serum/Plasma only  
  • Tissue Culture samples only  
  ♠ Requires sample acidification  
  ◄ Analyte cannot be measured in plasma  
  ▼ Urine only
### Toxicity

**Mouse Kidney Injury Panel 1**  
(Cat. No. MK1IMAG-94K)

- β-2-Microglobulin
- IP-10/CXCL10
- KIM-1

**Mouse Kidney Injury Panel 2**  
(Cat. No. MK2IMAG-94K)

- Clusterin
- Cystatin C
- EGF

---

### RAT

#### Immunology

**Rat Cytokine/Chemokine**  
(Cat. No. RECYTMAG-65K)

- IL-10
- IL-12 (p70)
- IL-13
- IL-17A/CTLA8
- IL-18
- IFNγ
- IL-6
- IL-1β
- IL-2
- IL-4
- IL-5
- IL-6
- Eotaxin/CCL11
- GM-CSF
- KC/GRO/CINC-1/CXCL1
- IL-10/CXCL10
- IL-1α
- IL-1β
- IL-2
- IL-4
- IL-5
- IL-6
- EGF
- Eotaxin/CCL2
- Fractalkine/CX3CL1
- G-CSF

**Rat Myokine**  
(Cat. No. RMYOMAG-88K)

- Myostatin/GDF8
- Follistatin-like Protein 1 (FSTL1)
- Fractalkine/CX3CL1
- IL-6

**Rat Metabolic Hormone Expanded**  
(Cat. No. RMHE-120K)

- Amylin (active)
- C-Peptide 2
- Ghrelin (active)
- GIP (total)
- GLP-1 (active)
- GLP-1 (total)
- Glucagon
- IL-6
- Insulin
- Leptin
- Pancreatic Polypeptide (PP)
- PYY (total)
- Secretin

**Rat Pituitary**  
(Cat. No. RPTMAG-86K)

- ACTH
- BDNF
- FSH
- GH
- LH
- LIF
- Myostatin/GDF8
- Osteocrin (OSTN)/Musclin
- Osteonectin/SPARC

**Rat Stress Hormone**  
(Cat. No. RSHMAG-69K)

- ACTH
- Corticosterone
- Melatonin

**Rat Thyroid**  
(Cat. No. RTHYMAG-30K)

- T3
- T4
- TSH

---

### Cardiovascular

**Rat Cardiac Injury Panel 1**  
(Cat. No. RCIIMAG-87K)

- Cardiac Troponin I (cTnI)
- Cardiac Troponin T (cTnT)
- Creatine Kinase Muscle (CKM)

**Rat Vascular Injury Panel 1**  
(Serum/Plasma samples)  
(Cat. No. RV1MAG-26K)

- Caveolin-1
- Connective Tissue Growth Factor (CTGF)
- IL-6
- MCP-1/CCL2
- PAI-1 (total)
- TIMP-1
- TNFα

**Rat Vascular Injury Panel 2**  
(Serum/Plasma samples)  
(Cat. No. RV2MAG-26K)

- Adiponectin
- sE-Selectin

**Rat Vascular Injury Panel 3**  
(Serum/Plasma samples)  
(Cat. No. RV3MAG-26K)

- α-1-Acid Glycoprotein
- α-2-Macroglobulin
- Haptoglobin
- α-1-Antitrypsin
- Haptoglobin

### Metabolism/Endocrinology

**Rat Adipokine**  
(Serum/Plasma samples)  
(Cat. No. RADPKMAG-80K)

- IL-1β
- IL-6
- Insulin
- Leptin

**Rat Adipocyte**  
(Cell culture samples)  
(Cat. No. RADPMCMAG-82K)

- Adiponectin
- Erythropoietin (EPO)
- Follistatin-like Protein 1 (FSTL1)
- Fractalkine/CX3CL1
- IL-6

**Rat Metabolic Hormone Expanded**  
(Cat. No. RMHE-120K)

- Amylin (active)
- C-Peptide 2
- Ghrelin (active)
- GIP (total)
- GLP-1 (active)
- GLP-1 (total)
- Glucagon
- IL-6
- Insulin
- Leptin
- Pancreatic Polypeptide (PP)
- PYY (total)
- Secretin

**Rat Pituitary**  
(Cat. No. RPTMAG-86K)

- ACTH
- BDNF
- FSH
- GH
- LH
- LIF
- Myostatin/GDF8
- Osteocrin (OSTN)/Musclin
- Osteonectin/SPARC

**Rat Stress Hormone**  
(Cat. No. RSHMAG-69K)

- ACTH
- Corticosterone
- Melatonin

**Rat Thyroid**  
(Cat. No. RTHYMAG-30K)

- T3
- T4
- TSH

---

### Bone

**Rat Bone Panel 1**  
(Serum/Plasma samples)  
(Cat. No. RBN1MAG-31K)

- ACTH
- DKK1
- Follistatin-like Protein 1 (FSTL1)
- FGF-23
- PTH
- Insulin
- Leptin

**Rat Bone Panel 2**  
(Serum/Plasma samples)  
(Cat. No. RBN2MAG-31K)

- ACTH
- DKK1
- Follistatin-like Protein 1 (FSTL1)
- FGF-23
- PTH
- Insulin
- Leptin

### Neuroscience

**Rat Neuropeptide**  
(Cat. No. RMNPMAG-83K)

- a-MSH
- β-Endorphin
- Orexin
- Neuropeptide Y

---

**Quality in Every MILLIPLEX® Kit**

We pride ourselves in our quality R&D, support, manufacturing, and QC.

Read more at: [SigmaAldrich.com/milliplex-quality](http://SigmaAldrich.com/milliplex-quality)
**Toxicity**

**Rat Kidney Toxicity Panel 1** (Urine samples)
(Cat. No. RKTX1MAG-37K)
- Clusterin
- Osteopontin (OPN)
- GSTα
- TIMP-1
- IP-10/CXCL10
- VEGF-A
- KIM-1

**Rat Kidney Toxicity Panel 2** (Urine samples)
(Cat. No. RKTX2MAG-37K)
- α-1-Acid Glycoprotein (AGP)
- Cystatin C
- EGF
- Albumin^
- NGAL/Lipocalin-2
- β-2-Microglobulin

**Rat Liver Injury**
(Cat. No. RLI1MAG-92K)
- SNT/CD73
- GSTα
- SDH
- GOT1

**COMPANION/AGRICULTURAL**

**Immunology**

**Bovine Cytokine/Chemokine Panel 1**
- (Cat. No. BCYT1-33K)
- (Cat. No. BCYT1-33K-PX15)
- (Bulk Cat. No. BCYT1-33K-PXBK15)
- IFNγ
- IL-1α
- IL-1β
- IL-4
- IL-6
- IL-8/CXCL8
- IL-10
- VEGF-A
- IL-17A/CTLA8

**Bovine Acute Phase Protein**
- (Cat. No. BAPP1-15OK)
- Haptoglobin
- Fibrinogen

**Canine Cytokine/Chemokine**
- (Cat. No. CCYTOMAG-90K)
- (Cat. No. CCYTOMAG-90K-PX13)
- (Bulk Cat. No. CCYTOMAG90KPIX13BK)
- GM-CSF
- IL-15
- IFNγ
- IL-2
- IL-6
- IL-8/CXCL8
- IL-10

**Chicken Cytokine/Chemokine**
- (Cat. No. CCYT1-16K)
- (Cat. No. CCYT1-16K-PX12)
- (Cat. No. CCYT1-16K-PXBK12)
- IFNγ
- IL-21
- M-CSF
- MIP-1β/CCL4
- MIP-3α/CCL20
- RANTES/CCL5
- VEGF

**Equine Cytokine/Chemokine**
- (Cat. No. EQCYTMAG-93K)
- (Cat. No. EQCYTMAG-93KXP23)
- (Cat. No. EQCYTMAG93KPIX23BK)
- Eotaxin/CCL11
- FGF-2/FGF-basic
- Fractalkine/CX3CL1
- IL-6
- IL-10
- IL-12 (p70)

**Feline Cytokine/Chemokine**
- (Cat. No. FCYT1-91K)
- (Cat. No. FCYT1-91K-PX14)
- (Bulk Cat. No. FCYT1-91K-PXBK14)
- IFNγ
- IL-10
- IL-1β
- IL-6
- IL-8/CXCL8
- IL-10

**Porcine Cytokine/Chemokine**
- (Cat. No. PCYT1MAG-23K)
- (Cat. No. PCYT1MAG-23K-PX13P)
- (Bulk Cat. No. PCYT1MAG23KPIX13BK)
- GM-CSF
- IL-6
- IFNγ
- IL-8/CXCL8
- IL-10
- IL-12
- IL-1Ra
- IL-2
- TNFo

**Porcine Acute Phase Protein**
- (Cat. No. PAPP1-160K)
- CRP
- Haptoglobin

---

**MILLIPLEX® Veterinary Medicine and Animal Health Kits**

Expand your possibilities in animal health research with our wide selection of biomarker kits.

Discover more at SigmaAldrich.com/vetmed

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**Legend key for MILLIPLEX® kits**

- † Analytes which cannot beplexed together:
  - – Active and total
  - – Free and total
  - ◊ Available in Cat. No. listed
  - ♦ Premix panel only
  - ▲ Bulk indicates Space Saver Packaging
  - ▼ These analytes cannot beplexed with other analytes in this panel in serum/plasma
  - ▲ Competitive assay format
  - ❌ Available for custom premix
  - ▼ Analyte requires a different sample dilution from others in panel
  - ◊ Analyte cannot be measured in serum
  - ◊ Requires sample extraction
  - ◊ Serum/Plasma only
  - ◊ Tissue Culture samples only
  - ▲ No standard/QC; antibody levels are reported as MFIs (Median Fluorescence Intensities)
  - ▲ Serum/Plasma only
  - ▲ Tissue Culture samples only
### MULTIPLE

#### Metabolism/Endocrinology

<table>
<thead>
<tr>
<th>Canine Gut Hormone (Cat. No. CGTMAG-98K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amylin (total)</td>
</tr>
<tr>
<td>Ghrelin (active)</td>
</tr>
<tr>
<td>GIP (total)</td>
</tr>
<tr>
<td>GLP-1 (active)</td>
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</table>

<table>
<thead>
<tr>
<th>Canine Pituitary Expanded Panel (Cat. No. CANPIT-96K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTH</td>
</tr>
<tr>
<td>FSH</td>
</tr>
<tr>
<td>GH</td>
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</tbody>
</table>

#### Toxicity

<table>
<thead>
<tr>
<th>Canine Kidney Toxicity Expanded Panel 1 (Urine samples) (Cat. No. CKT1MAG-97K)</th>
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</thead>
<tbody>
<tr>
<td>Clusterin</td>
</tr>
<tr>
<td>Cystatin C</td>
</tr>
<tr>
<td>IL-8/CXCL8</td>
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<tr>
<td>KIM-1</td>
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</table>

<table>
<thead>
<tr>
<th>Canine Kidney Toxicity Panel 2 (Urine samples) (Cat. No. CKT2MAG-97K)</th>
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<tbody>
<tr>
<td>Albumin</td>
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<tr>
<td>β-2-Microglobulin</td>
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</table>

#### IMMUNOLOGY

### MULTI-SPECIES

#### Immunology

**Multi-Species TGFβ – Singleplex #**

(Cat. No. TGFBMAG-64K-01) (Bulk Cat. No. TGFBMAG-64K-01BK)

Species: C, E, F, H, M, NHP, Por, R, guinea pig, hamster, rabbit

<table>
<thead>
<tr>
<th>TGFβ1</th>
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<tbody>
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</tbody>
</table>

| Multi-Species TGFβ – 3 Plex ▼# |

(Cat. No. TGFBMAG-64K-03) (Bulk Cat. No. TGFBMAG-64K-03BK)

Species: H, M, NHP, R, guinea pig, hamster, mini pig; additionally, TGF-β1 and TGF-β2 can be detected in the serum of C, E, and rabbit

<table>
<thead>
<tr>
<th>TGFβ1</th>
<th>TGFβ2</th>
<th>TGFβ3</th>
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</thead>
<tbody>
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</table>

**NON-CONFIGURABLE KIT**

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#### Metabolism/Endocrinology

**Multi-Species Hormone ■ ▲**

(Cat. No. MSHMAG-21K)

Species: C, E, F, H, M, NHP, Por, R, guinea pig, hamster, rabbit

<table>
<thead>
<tr>
<th>Cortisol</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estradiol</td>
<td>T4</td>
</tr>
<tr>
<td>Progesterone</td>
<td>T5</td>
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#### KITS TO BE PHASED OUT

### Non-Human Primate Cytokine/Chemokine Panel 1

- **Non-Human Primate Cytokine/Chemokine Panel 1**

<table>
<thead>
<tr>
<th>sCD40L</th>
<th>IL-12/23 (p40)</th>
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<tbody>
<tr>
<td>GM-CSF</td>
<td>IL-13</td>
</tr>
<tr>
<td>IFNγ</td>
<td>IL-17A/CTLA8</td>
</tr>
<tr>
<td>IL-1β</td>
<td>IL-18</td>
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<tr>
<td>IL-1Ra</td>
<td>MCP-1/CCL2</td>
</tr>
<tr>
<td>IL-2</td>
<td>MIP-1a/CCL3</td>
</tr>
<tr>
<td>IL-4</td>
<td>MIP-1β/CCL4</td>
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<tr>
<td>IL-5</td>
<td>TGFα</td>
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<tr>
<td>IL-6</td>
<td>TNFα</td>
</tr>
<tr>
<td>IL-8/CXCL8</td>
<td>VEGF-A</td>
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<tr>
<td>IL-10</td>
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</tbody>
</table>

**Non-Human Primate Cytokine/Chemokine Panel 2**

- **Non-Human Primate Cytokine/Chemokine Panel 2**

<table>
<thead>
<tr>
<th>sCD137/4-1BB/</th>
<th>TNFα/5F</th>
</tr>
</thead>
<tbody>
<tr>
<td>FasL</td>
<td>IL-21</td>
</tr>
<tr>
<td>FGF-2/FGF-basic</td>
<td>IL-22</td>
</tr>
<tr>
<td>Fractalkine/CX3CL1</td>
<td>IL-31</td>
</tr>
<tr>
<td>Granzyme A</td>
<td>IL-28A/IFNA2</td>
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<tr>
<td>Granzyme B</td>
<td>IL-33/IF-HEV (mature)</td>
</tr>
<tr>
<td>IL-1α</td>
<td>IP-10/CXCL10</td>
</tr>
<tr>
<td>IL-1β</td>
<td>MIP-3α/CCL20</td>
</tr>
<tr>
<td>IL-4</td>
<td>Perforin</td>
</tr>
<tr>
<td>IL-6</td>
<td>RANTES/CCL5 ▲</td>
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<tr>
<td>IL-16</td>
<td>TNFβ/Lymphotxin-a (LTA)</td>
</tr>
<tr>
<td>IL-17A/CTLA8</td>
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</tbody>
</table>

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SigmaAldrich.com/milliplex
# Cell Signaling MILLIPLEX® Assays

** Akt/mTOR (Phosphoprotein) – 11 Plex**  
(Cat. No. 48-611MAG) AB2 ▼ NON-CONFIGURABLE KIT  

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akt/PKB</td>
<td>✓</td>
<td>✓ (Ser473)</td>
</tr>
<tr>
<td>GSK3α</td>
<td>✓</td>
<td>✓ (Ser9)</td>
</tr>
<tr>
<td>GSK3β</td>
<td>✓</td>
<td>✓ (Ser9)</td>
</tr>
<tr>
<td>IGF1R</td>
<td>✓</td>
<td>✓ (Tyr1135/1136)</td>
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<tr>
<td>IR</td>
<td>✓</td>
<td>✓ (Tyr1162/1163)</td>
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<tr>
<td>IRS1</td>
<td>✓</td>
<td>✓ (Ser636)</td>
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<tr>
<td>mTOR</td>
<td>✓</td>
<td>✓ (Ser2448)</td>
</tr>
<tr>
<td>p70S6 Kinase</td>
<td>✓</td>
<td>✓ (Thr412)</td>
</tr>
<tr>
<td>PTEN</td>
<td>✓</td>
<td>✓ (Ser380)</td>
</tr>
<tr>
<td>RPS6</td>
<td>✓</td>
<td>✓ (Ser235/236)</td>
</tr>
<tr>
<td>TSC2</td>
<td>✓</td>
<td>✓ (Ser939)</td>
</tr>
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**Akt/mTOR (Total) – 11 Plex**  
(Cat. No. 48-612MAG) AB2 ▼ NON-CONFIGURABLE KIT  

<table>
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<td>GSK3α</td>
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<tr>
<td>GSK3β</td>
<td>✓</td>
<td>✓ (Ser9)</td>
</tr>
<tr>
<td>IGF1R</td>
<td>✓</td>
<td>✓ (Tyr1135/1136)</td>
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<tr>
<td>IR</td>
<td>✓</td>
<td>✓ (Tyr1162/1163)</td>
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<tr>
<td>IRS1</td>
<td>✓</td>
<td>✓ (Ser636)</td>
</tr>
<tr>
<td>mTOR</td>
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<td>✓ (Ser2448)</td>
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<tr>
<td>p70S6 Kinase</td>
<td>✓</td>
<td>✓ (Thr412)</td>
</tr>
<tr>
<td>PTEN</td>
<td>✓</td>
<td>✓ (Ser380)</td>
</tr>
<tr>
<td>RPS6</td>
<td>✓</td>
<td>✓ (Ser235/236)</td>
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<tr>
<td>TSC2</td>
<td>✓</td>
<td>✓ (Ser939)</td>
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**Early Apoptosis – 7 Plex**  
(Cat. No. 48-669MAG) AB2 ▼ NON-CONFIGURABLE KIT  

<table>
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<tbody>
<tr>
<td>Akt/PKB</td>
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<td>✓ (Ser473)</td>
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<tr>
<td>BAD</td>
<td>✓</td>
<td>✓ (Ser112)</td>
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<tr>
<td>Bcl-2</td>
<td>✓</td>
<td>✓ (Ser112)</td>
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<tr>
<td>Active Caspase-8 (Asp384)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Active Caspase-9 (Asp315)</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>JNK/SAPK1</td>
<td>✓</td>
<td>✓ (Thr183/Tyr185)</td>
</tr>
<tr>
<td>p53</td>
<td>✓</td>
<td>✓ (Ser46)</td>
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</table>

**Human Bcl-2 Family Apoptosis Panel 1 - 6 Plex**  
(Cat. No. 48-682MAG) AB1 ▼ NON-CONFIGURABLE KIT  

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>BAD</td>
<td>✓</td>
<td>✓ (Ser112)</td>
</tr>
<tr>
<td>BAX</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bcl-xL/BAD (interaction)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BIM</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mcl-1/BIM (interaction)</td>
<td>✓</td>
<td>✓</td>
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</table>

**Human Bcl-2 Family Apoptosis Panel 2 - 4 Plex**  
(Cat. No. 48-683MAG) AB1 ▼ NON-CONFIGURABLE KIT  

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<tbody>
<tr>
<td>Bcl-2</td>
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<td>✓</td>
</tr>
<tr>
<td>Bcl-xL</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mcl-1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NOXA/Mcl-1 (interaction)</td>
<td>✓</td>
<td>✓</td>
</tr>
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</table>

**Human Bcl-2 Family Apoptosis Panel 3 - 4 Plex**  
(Cat. No. 48-684MAG) AB1 ▼ NON-CONFIGURABLE KIT  

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</thead>
<tbody>
<tr>
<td>Bcl-2</td>
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<td>✓</td>
</tr>
<tr>
<td>Bcl-xL</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mcl-1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NOXA/Mcl-1 (interaction)</td>
<td>✓</td>
<td>✓</td>
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</table>

**Human DNA Damage/Genotoxicity – 7 Plex**  
(Cat. No. 48-621MAG) AB1 ▼ NON-CONFIGURABLE KIT  

<table>
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<td>✓</td>
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<tr>
<td>Chk1</td>
<td>✓</td>
<td>✓ (Ser345)</td>
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<tr>
<td>Chk2</td>
<td>✓</td>
<td>✓ (Thr68)</td>
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<td>H2A.X</td>
<td>✓</td>
<td>✓ (Ser139)</td>
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<tr>
<td>MDM2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>p21</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>p53</td>
<td>✓</td>
<td>✓ (Ser15)</td>
</tr>
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</table>

**MAPK/SAPK (Phosphoprotein) – 10 Plex**  
(Cat. No. 48-660MAG) AB2 ▼ NON-CONFIGURABLE KIT  

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<thead>
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<td>✓ (Thr71)</td>
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<tr>
<td>c-Jun</td>
<td>✓</td>
<td>✓ (Ser373)</td>
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<tr>
<td>Erk/MAPK 1/2</td>
<td>✓</td>
<td>✓ (Thr185/Tyr187)</td>
</tr>
<tr>
<td>HSP27</td>
<td>✓</td>
<td>✓ (Ser78)</td>
</tr>
<tr>
<td>JNK/SAPK1</td>
<td>✓</td>
<td>✓ (Thr183/Tyr185)</td>
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<tr>
<td>MEK1</td>
<td>✓</td>
<td>✓ (Ser222)</td>
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<tr>
<td>MSK1</td>
<td>✓</td>
<td>✓ (Ser212)</td>
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<tr>
<td>p38/SAPK2A/B</td>
<td>✓</td>
<td>✓ (Thr180/Tyr182)</td>
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<tr>
<td>p53</td>
<td>✓</td>
<td>✓ (Ser15)</td>
</tr>
<tr>
<td>STAT1</td>
<td>✓</td>
<td>✓ (Tyr701)</td>
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</tbody>
</table>

### Learn more about Cancer and Metastasis Signaling Pathways

Read about all of the kits that can elucidate your signaling research at [SigmaAldrich.com/milliplex-cancer-cs](https://SigmaAldrich.com/milliplex-cancer-cs)

- Can be plexed with other 2 Plexes
- Cannot plex with other phospho Akt
- Premix panel only

AB1: Uses Assay Buffer 1  
AB2: Uses Assay Buffer 2  
H Human  
M Mouse  
R Rat
### Human RTK (Phosphoprotein)

(Choose analytes that meet your needs)

(Cat. No. HPRTKMAG-01K) AB1

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
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</tr>
</thead>
<tbody>
<tr>
<td>c-Kit (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>c-Met/HGFR (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>ErbB1/EGFR (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>ErbB2/HER2 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>ErbB3/HER3 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>ErbB4/HER4 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>FGFR1 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>Flt3 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>M-CSFR (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>PDGFRα (pan Tyr)</td>
<td></td>
<td>M, R</td>
</tr>
<tr>
<td>PDGFRβ (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>TIE1 (pan Tyr)</td>
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<td>H</td>
</tr>
<tr>
<td>TIE2 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>VEGFR1/Fit-1 (pan Tyr)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>VEGFR2/KDR/Fik-1 (pan)</td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>VEGFR3/Fik-4 (pan)</td>
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<td>H, M, R</td>
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</table>

### Multi-Pathway (Phosphoprotein) — 9 Plex

(Cat. No. 48-680MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
<th>Analyte</th>
<th>Total</th>
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<tbody>
<tr>
<td>Akt/PKB (Ser473)</td>
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<td>H, M, R</td>
</tr>
<tr>
<td>CREB (Ser133)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>Erk/MAPK 1/2 (Thr185/Tyr187)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>JNK/SAPK1 (Thr183/Tyr185)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>NfκB (Ser536)</td>
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<td>H, M, R</td>
</tr>
<tr>
<td>p38/SAPK2A/B (Thr180/Tyr182)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>p70S6 Kinase (Thr412)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT3 (Ser727)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT5A/B (Tyr694/699)</td>
<td>✓</td>
<td>H, M, R</td>
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</table>

### Multi-Pathway (Total) — 9 Plex

(Cat. No. 48-681MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
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<tbody>
<tr>
<td>Akt/PKB (Ser473)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>CREB (Ser133)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>Erk/MAPK 1/2 (Thr185/Tyr187)</td>
<td>✓</td>
<td>H, M, R</td>
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<tr>
<td>JNK/SAPK1 (Thr183/Tyr185)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>NfκB (Ser536)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>p38/SAPK2A/B (Thr180/Tyr182)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>p70S6 Kinase (Thr412)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT3 (Ser727)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT5A/B (Tyr694/699)</td>
<td>✓</td>
<td>H, M, R</td>
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</table>

### NFκB — 6 Plex

(Cat. No. 48-630MAG) AB1 ▼ **NON-CONFIGURABLE KIT**

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<tr>
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<tbody>
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<tr>
<td>IkBα (Ser32)</td>
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</tr>
<tr>
<td>IKKα/β (Ser177/181)</td>
<td>✓</td>
<td>H</td>
</tr>
<tr>
<td>NfκB (Ser536)</td>
<td>✓</td>
<td>H, M</td>
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<tr>
<td>TNFR1</td>
<td>✓</td>
<td>H</td>
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### Protein Translation — 6 Plex

(Cat. No. 48-655MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>elF-4B (Ser422)</td>
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</tr>
<tr>
<td>elF-4E (Ser209)</td>
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<td>H, M, R</td>
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<tr>
<td>elF-4G (Ser1108)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>4E-BP1 (Thr37/46)</td>
<td>✓</td>
<td>H, M, R</td>
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</table>

### Human Ras-Raf Oncoprotein — 6 Plex

(Cat. No. 48-684MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
<th>Analyte</th>
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<tbody>
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<td>CRAF (Ser338)</td>
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<td>MEK1 (Ser217/221)</td>
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<td>H, M, R</td>
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<tr>
<td>Ras</td>
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<td>H</td>
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<tr>
<td>RasG12V</td>
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<td>H</td>
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</table>

### Src Family Kinase Active Site (Phosphoprotein) — 8 Plex

(Cat. No. 48-650MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Blk (Tyr389)</td>
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<td>H</td>
</tr>
<tr>
<td>Fgr (Tyr412)</td>
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<td>H, R</td>
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<tr>
<td>Fyn (Tyr420)</td>
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<td>H, M, R</td>
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<tr>
<td>Hck (Tyr411)</td>
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<td>H, M</td>
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<td>Lck (Tyr394)</td>
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<tr>
<td>Lyn (Tyr397)</td>
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<tr>
<td>Src (Tyr419)</td>
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<tr>
<td>Yes (Tyr421)</td>
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<td>H, M, R</td>
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### STAT (Phosphoprotein) — 5 Plex

(Cat. No. 48-610MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
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</tr>
</thead>
<tbody>
<tr>
<td>STAT1 (Tyr701)</td>
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<td>H, M</td>
</tr>
<tr>
<td>STAT2 (Tyr690)</td>
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<td>H</td>
</tr>
<tr>
<td>STAT3 (Tyr705)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT5A/B (Tyr694/699)</td>
<td>✓</td>
<td>H, M, R</td>
</tr>
<tr>
<td>STAT6 (Tyr641)</td>
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<td>H</td>
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</table>
### T-Cell Receptor (Phosphoprotein) — 7 Plex

(Cat. No. 48-690MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
<th>Analyte</th>
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<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD3ε</td>
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<td>✓ (pan Tyr)</td>
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<tr>
<td>CREB</td>
<td></td>
<td>✓ (Ser133)</td>
</tr>
<tr>
<td>Erk/MAPK 1/2</td>
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<td>✓ (Thr185/Tyr187)</td>
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<tr>
<td>LAT</td>
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<td>✓ (pan Tyr)</td>
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<tr>
<td>Lck</td>
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<td>✓ (pan Tyr)</td>
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<tr>
<td>Syk</td>
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<td>ZAP-70</td>
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### Erk/MAPK 1/2 Phospho/Total — 2 Plex

(Cat. No. 48-619MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

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<tbody>
<tr>
<td>Erk/MAPK 1/2</td>
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<td>✓ (Thr185/Tyr187)</td>
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### JNK Phospho/Total — 2 Plex

(Cat. No. 48-622MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
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<th>Total</th>
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</thead>
<tbody>
<tr>
<td>JNK/SAPK1</td>
<td></td>
<td>✓ (Thr183/Tyr185)</td>
</tr>
</tbody>
</table>

### TGFβ — 6 Plex

(Cat. No. 48-614MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
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<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akt/PKB</td>
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<td>✓ (Ser473)</td>
</tr>
<tr>
<td>Erk/MAPK 1/2</td>
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<td>✓ (Thr185/Tyr187)</td>
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<tr>
<td>SMAD2</td>
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<td>✓ (Ser465/467)</td>
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<tr>
<td>SMAD3</td>
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<td>✓ (Ser423/425)</td>
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<td>SMAD4</td>
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<tr>
<td>TGFβRII</td>
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</tbody>
</table>

### Akt Phospho/Total — 2 Plex

(Cat. No. 48-618MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akt/PKB</td>
<td></td>
<td>✓ (Ser473)</td>
</tr>
</tbody>
</table>

### Akt1 Phospho/Total — 2 Plex

(Cat. No. 48-631MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akt1</td>
<td></td>
<td>✓ (Ser473)</td>
</tr>
</tbody>
</table>

### Akt2 Phospho/Total — 2 Plex

(Cat. No. 48-632MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akt2</td>
<td></td>
<td>✓ (Ser474)</td>
</tr>
</tbody>
</table>

### CREB Phospho/Total — 2 Plex

(Cat. No. 48-628MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREB</td>
<td></td>
<td>✓ (Ser133)</td>
</tr>
</tbody>
</table>

### mTOR Phospho/Total — 2 Plex

(Cat. No. 48-625MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>mTOR</td>
<td></td>
<td>✓ (Ser2448)</td>
</tr>
</tbody>
</table>

### p38 Phospho/Total — 2 Plex

(Cat. No. 48-624MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>p38/SAPK2A/B</td>
<td></td>
<td>✓ (Thr180/Tyr182)</td>
</tr>
</tbody>
</table>

### STAT3 Phospho/Total — 2 Plex

(Cat. No. 48-623MAG) AB1 or AB2 ▼ **NON-CONFIGURABLE KIT**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Total</th>
<th>Phosphorylated</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT3</td>
<td></td>
<td>✓ (Tyr705)</td>
</tr>
</tbody>
</table>

### MAPmate™ Singleplex Loading Control Assays

Plex loading control MAPmate™ assays into existing MILLIPLEX® Cell Signaling Panels. Our Cell Signaling Buffer and Detection Kit (Cat. No. 48-602MAG), may be purchased if additional buffers are required.

<table>
<thead>
<tr>
<th>MAPmate™ Kits</th>
<th>Species Homology (Buffer)</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>β-Tubulin</td>
<td>H, M, R (AB1 &amp; AB2)</td>
<td>46-713MAG</td>
</tr>
<tr>
<td>GAPDH</td>
<td>H (AB2)</td>
<td>46-667MAG</td>
</tr>
</tbody>
</table>

**Note:**
- ▼ Can be plexed with other 2 Plexes
- • Cannot plex with other phospho Akt
- ◼ Premix panel only

AB1: Uses Assay Buffer 1
AB2: Uses Assay Buffer 2

<table>
<thead>
<tr>
<th>Buffer</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Human</td>
</tr>
<tr>
<td>M</td>
<td>Mouse</td>
</tr>
<tr>
<td>R</td>
<td>Rat</td>
</tr>
</tbody>
</table>

For Research Use Only. Not for Use in Diagnostic Procedures.
Luminex® Multiplexing Platforms

Driving Assay Consistency

Combined with the largest portfolio of multiplex analytes available, we provide you the power of Luminex® xMAP® technology, the most trusted, widely used platform for biomarker screening and protein analysis. As a Luminex® partner, we are a preferred distributor of Luminex® instruments, accessories, and software.

Luminex® xMAP® technology offers many advantages compared to other immunoassay methods:

- **Multiplexing:** Data generated simultaneously is less prone to user error, enabling the end-user to construct cleaner data sets to explore multiple parameters.
- **Low sample volume:** With minimal hands-on time, screen multiple analytes in a single sample using a maximum of 25 µL per well.
- **Magnetic bead-based format:** Responds rapidly and efficiently to a magnetic field, enabling better and faster washing techniques, including high-throughput washing options.
- **Reproducibility:** High-volume production of xMAP® microspheres allows assay standardization that solid-phased flat arrays cannot provide.
- **Speed/high-throughput:** Simultaneously measure the concentration of a large number of different analytes in a single sample, in 96- or 384-well format, to do your work faster, gaining early and comprehensive data.

Specifications

<table>
<thead>
<tr>
<th>Instruments</th>
<th>xMAP® INTELLIFLEX® DR-SE®</th>
<th>xMAP® INTELLIFLEX®</th>
<th>FLEXMAP 3®</th>
<th>Luminex® 200™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat. No.</td>
<td>INTELLIFLEX-DRSE</td>
<td>INTELLIFLEX-RU0</td>
<td>40-014</td>
<td>40-012</td>
</tr>
<tr>
<td>Optics Hardware</td>
<td>Lasers/APDs/PMTs</td>
<td>Lasers/APDs/PMTs</td>
<td>Lasers/APDs/PMTs</td>
<td>Lasers/APDs/PMTs</td>
</tr>
<tr>
<td>Technology</td>
<td>Flow-based</td>
<td>Flow-based</td>
<td>Flow-based</td>
<td>Flow-based</td>
</tr>
<tr>
<td>Multiplexing</td>
<td>Up to 500</td>
<td>Up to 500</td>
<td>Up to 500</td>
<td>Up to 100 (80 on MagPlex® microspheres)</td>
</tr>
<tr>
<td>Dynamic Range**</td>
<td>≥5.5 logs (RP1)</td>
<td>≥4.5 logs (RP1)</td>
<td>≥4.5 logs (RP1)</td>
<td>≥3.5 logs (RP1)</td>
</tr>
<tr>
<td>Read Time</td>
<td>96-well in ~20 min, 384-well in ~75 min</td>
<td>96-well in ~20 min, 384-well in ~75 min</td>
<td>96-well in ~20 min, 384-well in ~75 min</td>
<td>96-well in ~45 min</td>
</tr>
<tr>
<td>Applications</td>
<td>Protein/nucleic acid</td>
<td>Protein/nucleic acid</td>
<td>Protein/nucleic acid</td>
<td>Protein/nucleic acid</td>
</tr>
<tr>
<td>Automation-Compatible Hardware</td>
<td>Front and side eject</td>
<td>Front eject only</td>
<td>Front eject only</td>
<td>Front eject only</td>
</tr>
<tr>
<td>Reporter Laser</td>
<td>532 nm (green), 405 nm (violet)</td>
<td>532 nm (green)</td>
<td>532 nm (green)</td>
<td>532 nm (green)</td>
</tr>
<tr>
<td>IQ/OQ</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>21 CFR Compliance</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Automation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Belysa® software</td>
<td>Belysa® software</td>
<td>xPONENT® basic + Belysa® software</td>
<td>xPONENT® basic + Belysa® software</td>
</tr>
<tr>
<td>Plate Format</td>
<td>96-well and 384-well</td>
<td>96-well and 384-well</td>
<td>96-well and 384-well</td>
<td>96-well</td>
</tr>
<tr>
<td>Footprint (Linear Bench Space, including PC)</td>
<td>58.4 cm x 61 cm x 76.2 cm</td>
<td>58.4 cm x 61 cm x 76.2 cm</td>
<td>110 cm x 62 cm x 63 cm</td>
<td>115 cm x 60 cm x 50 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>54.4 kg (120 lbs)</td>
<td>54.4 kg (120 lbs)</td>
<td>77.1 kg (170 lbs)</td>
<td>49 kg (113 lbs)</td>
</tr>
</tbody>
</table>

*DR-SE = dual reporter side eject; **RP = reporter

Luminex® 200™ and FLEXMAP 3® systems run on the Luminex® xPONENT® 4.3 data acquisition platform; the xMAP® INTELLIFLEX® systems run on INTELLIFLEX 1.0. All systems provide a consistent experience, from data input to results, no matter which instrument is used. All software adapts to fit the capabilities of each platform.

Choose the Best Multiplexing Platform for Your Research

Compare the four available Luminex® xMAP® technology instruments in detail at: SigmaAldrich.com/luminex
Critical Reagents Characterized for Consistency

Conferma® ELISAs

Conferma® ELISAs are developed with a focus on critical reagents to deliver assays with excellent detectability, sensitivity, and lot-to-lot consistency.

Three Key Factors

1. **The standard protein:** Produced in HEK293 cells to improve folding, the recombinant protein is evaluated using mass spectrometry (LC-MS, RP-LC-UV-MS) to compare the sequence coverage and mass with the recognized mature sequence of the target.

   IL-6 Calibrator Lot 028M4878V matches with the reported IL-6 sequence from UniProt accession # P05231, AA30-212.

2. **The monoclonal antibodies:** Multiple clones are produced and evaluated with close consideration of the antibody affinity towards the standard as determined by Surface Plasmon Resonance (SPR).

   Multiple lots of IL-8 capture and detection antibodies were evaluated against the standard (antigen) using SPR (Biacore™ system). All monoclonal antibodies selected for Conferma® kits have a $K_D < 0.5$ nM which is considered high affinity.

3. **Lot-to-lot consistency:** In addition to focusing on reagents, each assay batch is further verified at the finished kit level, comparing the standard curves for similarity and against a sample library (endogenous and spiked) to confirm they meet release criteria.

   Three lots of TNF-α Conferma® ELISA kits were evaluated for consistency using mathematical parallelism with Belysa® software curve comparison results using Lot 1 as a reference against Lots 2 and 3. Mathematical variation between curves is considered perfect when parallelism is equal to 1.

Conferma® ELISAs

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Std. Range (pg/mL)</th>
<th>LLOQ (Curve) (pg/mL)</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL-6 (Human)</td>
<td>1.17 – 150</td>
<td>1.17</td>
<td>EZIL6-98K</td>
</tr>
<tr>
<td>IL-8 (Human)</td>
<td>0.82 – 200</td>
<td>0.82</td>
<td>EZHL8-100K</td>
</tr>
<tr>
<td>MCP-1 (Human)</td>
<td>7.81 – 1,000</td>
<td>7.81</td>
<td>EZMCP1-99KRM</td>
</tr>
<tr>
<td>TNF-α (Human)</td>
<td>1.65 – 400</td>
<td>1.65</td>
<td>EZHTNFA-150K</td>
</tr>
</tbody>
</table>

Measured Mass by RP-LC-UV-MS: 20,977 Da
## Millipore® Brand ELISAs

<table>
<thead>
<tr>
<th>Metabolic/Endocrine/Cytokine ELISAs</th>
<th>Species</th>
<th>Standard Curve Range</th>
<th>Sensitivity</th>
<th>Sample Volume</th>
<th>Cat. No.</th>
<th>Bulk Packaging Cat. No.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adiponectin</td>
<td>Human</td>
<td>1.56–200 ng/mL</td>
<td>0.2 ng/mL</td>
<td>10 µL</td>
<td>EZHADP-61K</td>
<td>EZHADP-61BK</td>
</tr>
<tr>
<td>Adiponectin (High Molecular Weight)</td>
<td>Human</td>
<td>1.5–200 ng/mL</td>
<td>0.5 ng/mL</td>
<td>10 µL</td>
<td>EZHMWAN-65K</td>
<td></td>
</tr>
<tr>
<td>Amylin (active)</td>
<td>Human</td>
<td>1–100 pM</td>
<td>0.7 pM</td>
<td>50 µL</td>
<td>EZHA-52K</td>
<td></td>
</tr>
<tr>
<td>C-Peptide</td>
<td>Human</td>
<td>0.2–20 ng/mL</td>
<td>0.05 ng/mL</td>
<td>10 µL</td>
<td>EZHC-20K</td>
<td>EZHC-20BK</td>
</tr>
<tr>
<td>C-Peptide</td>
<td>Canine</td>
<td>0.2–10 ng/mL</td>
<td>0.24 ng/mL</td>
<td>25 µL</td>
<td>EZCCP-47K</td>
<td></td>
</tr>
<tr>
<td>C-Peptide 2</td>
<td>Mouse, Rat</td>
<td>25–1,600 pM</td>
<td>15.0 pM</td>
<td>20 µL</td>
<td>EZRMCP2-21K</td>
<td></td>
</tr>
<tr>
<td>C-Reactive Protein (CRP)</td>
<td>Human</td>
<td>0.12–10 ng/mL</td>
<td>0.2 ng/mL</td>
<td>2 µL</td>
<td>CYT298</td>
<td></td>
</tr>
<tr>
<td>C-Reactive Protein (CRP)</td>
<td>Rat</td>
<td>4.9–10 ng/mL</td>
<td>2.5 ng/mL</td>
<td>2 µL</td>
<td>CYT294</td>
<td></td>
</tr>
<tr>
<td>FGF-21</td>
<td>Human</td>
<td>31.25–2,000 pg/mL</td>
<td>10.0 pg/mL</td>
<td>50 µL</td>
<td>EZHFGF21-19K</td>
<td></td>
</tr>
<tr>
<td>FGF-21</td>
<td>Mouse, Rat</td>
<td>49.4–12,000 pg/mL</td>
<td>10.0 pg/mL</td>
<td>10 µL</td>
<td>EZRMFGF21-26K</td>
<td></td>
</tr>
<tr>
<td>FGF-23</td>
<td>Human</td>
<td>9.9–2,400 pg/mL</td>
<td>3.5 pg/mL</td>
<td>50 µL</td>
<td>EZHFGF23-32K</td>
<td>EZHFGF23-32BK</td>
</tr>
<tr>
<td>Ghrelin (active)</td>
<td>Human</td>
<td>25–2,000 pg/mL</td>
<td>15.0 pg/mL</td>
<td>20 µL</td>
<td>EZGRA-88K</td>
<td>EZGRA-88BK</td>
</tr>
<tr>
<td>Ghrelin (active)</td>
<td>Mouse, Rat</td>
<td>25–2,000 pg/mL</td>
<td>8.0 pg/mL</td>
<td>20 µL</td>
<td>EZGRA-90K</td>
<td></td>
</tr>
<tr>
<td>Ghrelin (total)</td>
<td>Human</td>
<td>100–5,000 pg/mL</td>
<td>50.0 pg/mL</td>
<td>20 µL</td>
<td>EZGRT-89K</td>
<td>EZGRT-89BK</td>
</tr>
<tr>
<td>Ghrelin (total)</td>
<td>Mouse, Rat</td>
<td>0.1–10 ng/mL</td>
<td>0.04 ng/mL</td>
<td>20 µL</td>
<td>EZRGRT-91K</td>
<td></td>
</tr>
<tr>
<td>GIP (total)</td>
<td>Human</td>
<td>8.2–2,000 pg/mL</td>
<td>4.2 pg/mL</td>
<td>20 µL</td>
<td>EZHGIP-54K</td>
<td>EZHGIP-54BK</td>
</tr>
<tr>
<td>GIP (total)</td>
<td>Mouse, Rat</td>
<td>8.2–2,000 pg/mL</td>
<td>4.2 pg/mL</td>
<td>10 µL</td>
<td>EZMGIP-55K</td>
<td>EZMGIP-55BK</td>
</tr>
<tr>
<td>GLP-1 (active)</td>
<td>Multi-Species</td>
<td>2–100 pM</td>
<td>1.0 pM</td>
<td>100 µL</td>
<td>EGPLP-35K</td>
<td>EGPLP-35BK</td>
</tr>
<tr>
<td>GLP-1 High Sensitivity (active) Δ**</td>
<td>Multi-Species</td>
<td>See data sheet</td>
<td>0.14 pM</td>
<td>50 µL</td>
<td>EZGLPHS-35K</td>
<td>EZGLPHS-35BK</td>
</tr>
<tr>
<td>GLP-1 (total)</td>
<td>Multi-Species</td>
<td>4.1–1,000 pM</td>
<td>1.0 pM</td>
<td>20-50 µL</td>
<td>EZGLP1T-36K</td>
<td>EZGLP1T-36BK</td>
</tr>
<tr>
<td>GLP-2</td>
<td>Multi-Species</td>
<td>1–64 ng/mL</td>
<td>0.3 ng/mL</td>
<td>50 µL</td>
<td>EZGLP2-37K</td>
<td></td>
</tr>
<tr>
<td>Glucagon Δ</td>
<td>Human, Mouse, Rat</td>
<td>0.02–2 ng/mL</td>
<td>0.003 ng/mL</td>
<td>150-300 µL</td>
<td>EZGLU-30K</td>
<td>EZGLU-30BK</td>
</tr>
<tr>
<td>Glucagon Δ</td>
<td>Human, Mouse, Rat</td>
<td>0.02–2 ng/mL</td>
<td>0.003 ng/mL</td>
<td>150-300 µL</td>
<td>EZGLU-30K</td>
<td>EZGLU-30BK</td>
</tr>
<tr>
<td>Growth Hormone (GH)</td>
<td>Mouse, Rat</td>
<td>0.7–50 ng/mL</td>
<td>0.07 ng/mL</td>
<td>10 µL</td>
<td>EZRMGH-45K</td>
<td>EZRMGH-45BK</td>
</tr>
<tr>
<td>IL-6</td>
<td>Human</td>
<td>1.17–150 pg/mL</td>
<td>1.17 pg/mL</td>
<td>50 µL</td>
<td>EZIL-98K</td>
<td>EZIL-98K10PK</td>
</tr>
<tr>
<td>IL-8</td>
<td>Human</td>
<td>0.82–200 pg/mL</td>
<td>0.8 pg/mL</td>
<td>50 µL</td>
<td>EZILB-100K</td>
<td>EZILB-100K10PK</td>
</tr>
<tr>
<td>Insulin</td>
<td>Human</td>
<td>2–200 µU/mL</td>
<td>1.0 µU/mL</td>
<td>20 µL</td>
<td>EZHI-14K</td>
<td>EZHI-14BK</td>
</tr>
<tr>
<td>Insulin</td>
<td>Mouse, Rat</td>
<td>0.2–10 ng/mL</td>
<td>0.1 ng/mL</td>
<td>10 µL</td>
<td>EZRMI-13K</td>
<td>EZRMI-13BK</td>
</tr>
<tr>
<td>Leptin</td>
<td>Canine</td>
<td>0.78–50 ng/mL</td>
<td>0.21 ng/mL</td>
<td>20 µL</td>
<td>EZCL-31K</td>
<td></td>
</tr>
<tr>
<td>Leptin</td>
<td>Mouse</td>
<td>0.2–30 ng/mL</td>
<td>0.05 ng/mL</td>
<td>10 µL</td>
<td>EZML-82K</td>
<td>EZML-82BK</td>
</tr>
<tr>
<td>Leptin</td>
<td>Rat</td>
<td>0.2–30 ng/mL</td>
<td>0.08 ng/mL</td>
<td>10 µL</td>
<td>EZRL-83K</td>
<td>EZRL-83BK</td>
</tr>
<tr>
<td>Leptin “Dual Range”</td>
<td>Human</td>
<td>0.5–100 ng/mL</td>
<td>0.2 ng/mL</td>
<td>25 µL</td>
<td>EZHL-80SK</td>
<td>EZHL-80BK</td>
</tr>
<tr>
<td>MCP-1</td>
<td>Human</td>
<td>7.18–1,000 pg/mL</td>
<td>7.18 pg/mL</td>
<td>10 µL (1:5 dilution)</td>
<td>EZMCP1-99KRM</td>
<td>EZMCP1-99K10PKRM</td>
</tr>
<tr>
<td>Procollagen Type IIA N-Propeptide (PIIANP)</td>
<td>Human</td>
<td>lot dependent</td>
<td>30.0 ng/mL</td>
<td>5 µL</td>
<td>EZPIIANP-53K</td>
<td></td>
</tr>
<tr>
<td>Proinsulin (total)</td>
<td>Human</td>
<td>2–200 pM</td>
<td>0.5 pM</td>
<td>20 µL</td>
<td>EZHPI-15K</td>
<td>EZHPI-15BK</td>
</tr>
<tr>
<td>PY (total)</td>
<td>Human</td>
<td>10–2,000 pg/mL</td>
<td>6.5 pg/mL</td>
<td>20 µL</td>
<td>EZHPY-66K</td>
<td></td>
</tr>
<tr>
<td>Resistin</td>
<td>Human</td>
<td>0.16–5 ng/mL</td>
<td>0.02 ng/mL</td>
<td>20 µL</td>
<td>EZHR-95K</td>
<td>EZHR-95BK</td>
</tr>
<tr>
<td>SAA-3</td>
<td>Mouse</td>
<td>0.078–5 µg/mL</td>
<td>0.078 µg/mL</td>
<td>10 µL</td>
<td>EZMSA-12K</td>
<td></td>
</tr>
<tr>
<td>TNF-α</td>
<td>Human</td>
<td>1.65–400 pg/mL</td>
<td>1.65 pg/mL</td>
<td>50 µL</td>
<td>EZHTNFA-150K</td>
<td>EZHTNFA-150K10PK</td>
</tr>
</tbody>
</table>

* Bulk packaging available on select kits — more environmentally friendly and saves space (10 kit equivalent)
** Preferred assay for measuring GLP-1 (active)
Δ Chemiluminescent assay

SigmaAldrich.com/elisa
### Millipore® Brand ELISAs & RIAs

#### Neuroscience ELISAs

<table>
<thead>
<tr>
<th>Species</th>
<th>Standard Curve Range</th>
<th>Sensitivity</th>
<th>Sample Volume</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amyloid beta 1-40</td>
<td>Human</td>
<td>16–500 pg/mL</td>
<td>4 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Amyloid beta 1-42</td>
<td>Human</td>
<td>16–500 pg/mL</td>
<td>5 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Amyloid beta, Set</td>
<td>Human</td>
<td>Contains 1 each of EZHS40 and EZHS42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyloid beta (Brain) 1-40</td>
<td>Human</td>
<td>16–500 pg/mL</td>
<td>4 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Amyloid beta (Brain) 1-42</td>
<td>Human</td>
<td>16–500 pg/mL</td>
<td>5 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Amyloid beta (Brain), Set</td>
<td>Human</td>
<td>Contains 1 each of EZBRAIN40 and EZBRAIN42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDNF (Brain-Derived Neurotrophic Factor)</td>
<td>Human, Rat</td>
<td>7.8–500 pg/mL</td>
<td>7.8 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>GFAP (Gliarial Fibrillary Acidic Protein)</td>
<td>Human, Mouse, Rat</td>
<td>1.5–100 ng/mL</td>
<td>1.5 ng/mL</td>
<td>100 µL</td>
</tr>
<tr>
<td>NPY (Neuropeptide Y)</td>
<td>Human</td>
<td>5–1,000 pg/mL</td>
<td>2 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>NPY (Neuropeptide Y)</td>
<td>Mouse, Rat</td>
<td>0.01–2 ng/mL</td>
<td>0.004 ng/mL</td>
<td>20 µL</td>
</tr>
<tr>
<td>PEDF (Pigment Epithelium-Derived Factor)</td>
<td>Human</td>
<td>0.9–62.5 ng/mL</td>
<td>0.9 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Phosphorylated Neurofilament, (pNF-H) Sandwich</td>
<td>Multi-Species</td>
<td>0.0293–15 ng/mL</td>
<td>0.0585 ng/mL</td>
<td>1-10 µL</td>
</tr>
</tbody>
</table>

#### RIA

<table>
<thead>
<tr>
<th>Species</th>
<th>Standard Curve Range</th>
<th>Sensitivity</th>
<th>Sample Volume</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adiponectin</td>
<td>Human</td>
<td>lot dependent</td>
<td>1 ng/mL</td>
<td>5 µL</td>
</tr>
<tr>
<td>C-Peptide</td>
<td>Canine</td>
<td>0.156–20 ng/mL</td>
<td>0.15 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>C-Peptide</td>
<td>Human</td>
<td>0.1–5 ng/mL</td>
<td>0.1 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Ghrelin (active)</td>
<td>Human</td>
<td>lot dependent</td>
<td>7.8 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Ghrelin (total)</td>
<td>Human</td>
<td>lot dependent</td>
<td>93 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>GLP-1 (active)</td>
<td>Multi-Species</td>
<td>10–500 pM</td>
<td>3 pM</td>
<td>300 µL</td>
</tr>
<tr>
<td>GLP-1 (total)</td>
<td>Multi-Species</td>
<td>10–1,000 pM</td>
<td>3 pM</td>
<td>300 µL</td>
</tr>
<tr>
<td>Glucagon</td>
<td>Multi-Species</td>
<td>20–400 pg/mL</td>
<td>20 pg/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Insulin</td>
<td>Porcine</td>
<td>2–200 µU/mL</td>
<td>2 µU/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Insulin</td>
<td>Rat</td>
<td>0.1–10 ng/mL</td>
<td>0.1 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Insulin (sensitive)</td>
<td>Rat</td>
<td>0.02–1 ng/mL</td>
<td>0.02 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Insulin Specific</td>
<td>Human</td>
<td>2–200 µU/mL</td>
<td>2 µU/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Leptin</td>
<td>Human</td>
<td>0.5–100 ng/mL</td>
<td>0.5 ng/mL</td>
<td>50–100 µL</td>
</tr>
<tr>
<td>Leptin</td>
<td>Multi-Species</td>
<td>1–50 ng/mL</td>
<td>1 ng/mL</td>
<td>50 µL</td>
</tr>
<tr>
<td>Proinsulin</td>
<td>Human</td>
<td>2–100 pM</td>
<td>2 pM</td>
<td>100–200 µL</td>
</tr>
<tr>
<td>PYY (3-36)</td>
<td>Human</td>
<td>lot dependent</td>
<td>20 pg/mL</td>
<td>&lt;100 µL</td>
</tr>
<tr>
<td>PYY (total)</td>
<td>Human</td>
<td>lot dependent</td>
<td>10 pg/mL</td>
<td>&lt;100 µL</td>
</tr>
</tbody>
</table>

---

**Sigma-Aldrich® Brand ELISAs**

We offer a portfolio of >1,300 ELISAs and EIAs, covering a diverse range of species, research areas, and sample types. Find your ELISA at SigmaAldrich.com/elisa
Make the Most of Your Immunoassays
Ancillary Equipment to Optimize Your Assays

We offer washers and readers from Agilent (BioTek® instruments) to support all of our platforms.

**BioTek® 405™ TSUVS Magnetic 96-Well Washer for SMC® Assays**

This fully automated system is designed to quickly wash an entire plate through biomagnetic separation, washing, and vacuum filtration. The system comes specifically optimized for use with SMC® assays with the inclusion of a specially designed magnetic plate and customized pre-programmed plate washing protocols. The 405™ TSUVS model offers an easy-to-use and glove touchable screen.

<table>
<thead>
<tr>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioTek® 405™ TSUVS Magnetic 96-Well Washer Complete with Touch Screen and</td>
<td>95-0004-05</td>
</tr>
<tr>
<td>Ultrasonic Cleaning for SMC® Assays</td>
<td></td>
</tr>
<tr>
<td>SMC® Plate Washer Evaluation Kit</td>
<td>03-0165-00</td>
</tr>
</tbody>
</table>

**BioTek® Washing & Dispensing Solutions for MILLIPLEX® Assays**

The MultiFlo™ FX dispenser allows users to dispense kit reagents, ensuring excellent assay reproducibility.

**BioTek® washer advantages:**

- Fast and hands-free full plate washing
- This washer includes an intuitive touch-screen user interface and the Ultrasonic Advantage™ cleaning program for easy washing of the toughest sample types

<table>
<thead>
<tr>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioTek® 405™ TS Magnetic 96-Well Washer Complete with Touch Screen and</td>
<td>40-092AB</td>
</tr>
<tr>
<td>Ultrasonic Cleaning</td>
<td></td>
</tr>
</tbody>
</table>

**Other Washers and ELISA Readers**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioTek® 50™ Magnetic 96-Well Strip Washer</td>
<td>40-301</td>
</tr>
<tr>
<td>BioTek® 800™ TS Absorbance Reader with Gen5™ Software</td>
<td>40-006</td>
</tr>
<tr>
<td>Handheld Magnetic Bead Washer Separator Block for 96-Well Flat Bottom or</td>
<td>40-285</td>
</tr>
<tr>
<td>Conical Well Plates</td>
<td></td>
</tr>
<tr>
<td>BioTek® MultiFlo™ FX Multimode Dispenser</td>
<td>40-999</td>
</tr>
</tbody>
</table>

**Enhance Your Workflows**

Explore BioTek® washers for our platforms at [SigmaAldrich.com/smc-washer](https://SigmaAldrich.com/smc-washer) and [SigmaAldrich.com/milliplex-washer](https://SigmaAldrich.com/milliplex-washer)
Belysa® Immunoassay Curve Fitting Software

(Cat. No. 40-122)

Our newest proprietary software package for curve fitting, examination, and comparison of data acquired from a variety of immunoassay platforms. Belysa® software has been designed to provide an easy-to-use tool to optimize curve fit and confirm the integrity of data within a plate or across plates from multiple runs.

Key Features and Benefits

- User-friendly interface
- Automatic and manual curve fitting (4pl, 5pl, linear, competitive, cubic spline)
- Curve comparison tools
- Rules-based data flagging
- Suitable for use with RUO Luminex® instruments, SMCxPRO® platform, and ELISA .csv acquisition files
- Windows 10 and macOS (beta) compatible

As shown in Example 1, a .csv output file is simply drag-and-dropped into the Belysa® browser for instant data review.

Once the user selects the curve fit model, either automatically by using the wizard, or manually, the data are displayed:

- Sample concentrations
- Recovery of standards
- Equation of line
- Limit of Detection (LOD)
- Lower Limit of Quantitation (LLOQ)
- Minimum Detectable Dose (MD)
- Data is exportable to: Excel, .csv, .txt, and .pdf
Data Autoflagging

As shown in Example 2, Belysa® software annotates data for hard rules such as below the limit of quantitation (BLOQ) using a yellow triangle. The user may define parameters such as acceptable %CV or bead counts which creates a pink flag next to the raw data that does not meet the user’s acceptance criteria. Then, a decision can be made to exclude points which will then be recorded if required for review.

Example 2. Belysa® data annotation: below LLOQ (yellow triangle), %CV (pink flags).

Belysa® Software Curve Comparison Tool

Comparing standard curves can provide crucial information on the reproducibility of an assay over multiple plates within specific runs or over the course of a longitudinal study. As shown in Example 3, Belysa® software provides a curve comparison tool for multiple curves imported from previously saved Belysa® output files. The first curve is used as a reference against which each subsequent curve is compared.

Comparison tests across multiple runs:
- Parallelism
- Relative potency of standards

Example 3. Comparison of two standard curves in Belysa® software from two lots of the same MILLIPLEX® assay run 1 year apart.
CADI: Custom Assay Development & Innovation

Accelerate your research with custom SMC®, MILLIPLEX®, and ELISA assays designed for your specific biomarker needs.

We understand you don’t always have the time, resources, or expertise to develop your own assay for your protein of interest. Rely on our vast development expertise and our ability to produce high-quality, reproducible immunoassays to help you accelerate your program from discovery research into clinical trials with a custom-designed solution.

Get started today!
View a complete listing of services at SigmaAldrich.com/customassay

Fit-For-Purpose Custom Assay Project Workflow

Develop a new SMC®, MILLIPLEX®, or ELISA assay which is fit for your purpose. We follow a milestone-based approach to generate an assay that quantifies your exact protein or proteins of interest. You will receive updates and data reviews during each milestone, offering you peace of mind that your project is on schedule and meeting specifications.

Example Custom Assay Offerings

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPRCUS1014</td>
<td>Custom Human 384-Well Circulating Cancer Biomarker Panel 3 8-Plex</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>SPRCUS1016</td>
<td>Custom Human 384-Well Angiogenesis Panel 2 20-Plex</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>SPRCUS1042</td>
<td>Custom Human 384-Well Immuno-Oncology Checkpoint Protein Panel 17-Plex</td>
<td>H (S/P, Sup)</td>
</tr>
</tbody>
</table>
# Custom MILLIPLEX® Analytes

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Species (Sample Types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>α-1 Antichymotrypsin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>α-2 Antiplasmin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>AGP (α 1-Acid Glycoprotein)</td>
<td>H (U)</td>
</tr>
<tr>
<td>Angiopoetin-1</td>
<td>H (S/P, T)</td>
</tr>
<tr>
<td>Anti-Cardiolipin antibody IgA</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Anti-EBV VCA IgG</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Anti-Phosphatidylserine IgG, IgM</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Antithrombin iii</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>Apolipoprotein A-IV</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Arginase 1</td>
<td>M (S/P)</td>
</tr>
<tr>
<td>AXL (s)</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>BAD (Ser112)</td>
<td>H, M (Lys)**</td>
</tr>
<tr>
<td>BCMA (B-cell Maturation Antigen)</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>BMP-9</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>BRD4</td>
<td>H, M, R (Lys)</td>
</tr>
<tr>
<td>Caspase 3 (Active)</td>
<td>H, M (Lys)**</td>
</tr>
<tr>
<td>CBP</td>
<td>H, M, R (Lys)</td>
</tr>
<tr>
<td>CD13 Aminopeptidase N</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>CD163 (s)</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Ceruloplasmin</td>
<td>H (U)</td>
</tr>
<tr>
<td>Cleaved PARP (total)</td>
<td>H (Lys)**</td>
</tr>
<tr>
<td>CSTB (Cystatin B)</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Elafin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Extracellular Matrix Protein (ECM1)</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>FGF-23</td>
<td>M (S/P, Sup)</td>
</tr>
<tr>
<td>Fibronectin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>G3BP (Galectin 3 Binding Protein)</td>
<td>H (U)</td>
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<tr>
<td>Gas-6</td>
<td>H, M, R (S/P)</td>
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<tr>
<td>Granzyme A</td>
<td>M (S/P)</td>
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<tr>
<td>Gremlin</td>
<td>M, R (S/P)</td>
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<tr>
<td>GRP78</td>
<td>H (S/P)</td>
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<tr>
<td>HGFR/cMET</td>
<td>M, R (S/P)</td>
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<tr>
<td>I-FABP</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>IGF-1</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>IL-18</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>IL-33R/ST2 (Suppressor of Tumorigenicity 2)</td>
<td>H (S/P)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Species (Sample Types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin</td>
<td>F (S/P)</td>
</tr>
<tr>
<td>Involucrin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>IRS1 (Ser133)</td>
<td>H, M, R (S/P)</td>
</tr>
<tr>
<td>IRS1 (total)</td>
<td>H, M, R (S/P)</td>
</tr>
<tr>
<td>Keratin-1,10</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Keratin-6</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>LPGDS (Lipocalin like prostaglandin D synthase)</td>
<td>H (U)</td>
</tr>
<tr>
<td>Lysozyme C</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>MIP-1γ</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>MR-proADM</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Osteoprotegrin (OPG)</td>
<td>M (S/P, Sup)</td>
</tr>
<tr>
<td>p300</td>
<td>H, M, R (Lys)</td>
</tr>
<tr>
<td>p38/SAPK2A/B (Thr180/Tyr182)</td>
<td>H, M, R (Lys)**</td>
</tr>
<tr>
<td>p38/SAPK2A/B (total)</td>
<td>H, M, R (Lys)**</td>
</tr>
<tr>
<td>Peristin</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>PODXL</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>Prealbumin (Transthryretin)</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Procalcitonin</td>
<td>H, M, R (S/P)</td>
</tr>
<tr>
<td>Prostaglandin D Synthase (lipocalin-type)</td>
<td>H (S/P, CSF, Sup)</td>
</tr>
<tr>
<td>Sclerostin (SOST)</td>
<td>M (S/P, Sup)</td>
</tr>
<tr>
<td>Semaphorin 3A</td>
<td>H (Sup)</td>
</tr>
<tr>
<td>STAT1 (total)</td>
<td>H, M (Lys)**</td>
</tr>
<tr>
<td>Tenascin C</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>Testosterone</td>
<td>Mul (S/P, Sup)</td>
</tr>
<tr>
<td>Thyroxine Binding Globulin</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>TRAIL</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>Transferrin</td>
<td>H (U)</td>
</tr>
<tr>
<td>Vasopressin</td>
<td>M, R (P)</td>
</tr>
<tr>
<td>VE Cadherin/Cadherin 5</td>
<td>H (S/P)</td>
</tr>
<tr>
<td>Vitamin D Binding Protein</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>Vitronectin</td>
<td>M, R (S/P)</td>
</tr>
<tr>
<td>Wnt-3a</td>
<td>H (S/P, Sup, Lys)</td>
</tr>
<tr>
<td>Zinc-α-2 Glycoprotein</td>
<td>H (S/P)</td>
</tr>
</tbody>
</table>

### Species Key
- **H** Human
- **M** Mouse
- **R** Rat
- **F** Feline
- **Mul** Multi-Species

### Sample Type Key
- **CSF** Cerebral Spinal Fluid
- **Lys** Cell/Tissue Lysates
- **S/P** Serum/Plasma
- **Sup** Cell/Tissue Culture Supernatants
- **T** Tears
- **U** Urine

### Notations
- **s** Soluble analyte
- **** No standard/QC; levels reported as MFIs (Median Fluorescence Intensities)
Beyond the Assay Development Workflow

In addition to our assay development services, we can support your other custom assay needs.

Our additional capabilities include:

Switching Formats
- MILLIPLEX® Assays: 96-well to 384-well
- SMC® Assays: bead-based to plate-based
- Converting MILLIPLEX® assays to SMC® assay platform

Biotherapeutic Assay Development
- Pharmacokinetics
- Pharmacodynamics
- Immunogenicity

Sample Testing
- Prototype sample testing
- Proprietary kit sample testing (SMC® assays only)
- SMC® immunoassay kit testing (SMC® assays only)

SMCxPlore™ Proof of Concept Sample Testing:
Use our SMCxPlore™ proof of concept sample testing service to “explore” SMC® technology with your analyte of interest or critical samples. Test up to 30 of your critical samples using one of our highly verified SMC® immunoassays.

Questions About CADI?
Explore our FAQs at SigmaAldrich.com/cadi-faqs
Rigorous Assay Development

Specificity
• Antibody specificity is tested to ensure negligible cross-reactivity in the tested sample types
• Assay specificity is ensured by confirming consistent performance in singleplex and multiplex formats

Method Comparisons
• We test our kits against in-house kits and kits from other vendors when available, ensuring the highest performing kits

Selectivity
• Assay buffers and bead diluents are optimized to enhance antibody binding to only those analytes of interest in samples

Detection and Sensitivity
• The assay range and minimum detectible concentrations (minDCs or LLOQ) for each analyte is published in our protocols, and is based on actual samples

Performance in a Sample Matrix
• Assays are verified for the sample type noted in the protocol; for serum/plasma sample kits, we provide an optimized serum matrix to mimic the environment of the sample, normalizing assay performance

Reproducible Results You Can Trust

Stability
• All kits are rigorously tested for shipping stability to determine impact on each analyte
• Sample stability is examined at a range of temperatures, and by freeze/thaw

Precision and Accuracy
• Precision of control standards are typically within 15% CV for intra-assay and 20% CV for inter-assay
• Spike recovery in sample is performed for each analyte at three concentrations; accuracy is normally within ± 30%

Linearity of Dilution
• Diluted sample results must be directly proportional to the concentration of analyte in the sample, typically within ± 30%

Lot-to-Lot Consistency
• A “gold standard” calibrator is defined during assay development and used as a reference for all future production lots

We’ll help you choose the right platform and assays to meet your needs today, and we’ll partner with you to meet those needs in the future — without compromising quality.
We have built a unique collection of life science brands with unrivalled experience in supporting your scientific advancements.