

## Luminex Cytokine Multiplex Assay

Luminex multiplex detection is driven by xMAP technology, which can detect and quantify more than 500 protein molecules. Compared to single-target ELISA, immunoprecipitation, or protein blotting assays, cytokine multiplex analysis is more effective, faster, and has a wider range of detection.

Creative Proteomics has developed a variety of cytokine panels that can detect and accurately measure multiple secreted proteins (cytokines, chemokines, growth factors, etc.) and biomarkers at the same time. This gives a way to study secreted protein factors in biological models, diseases, and organismal systems as a whole.

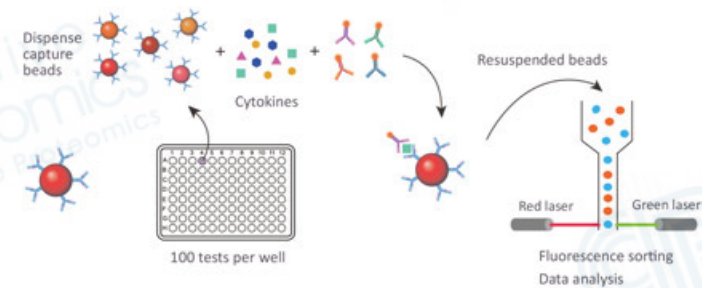


Fig 1. Principle of Luminex xMAP technology

### Why Choose Luminex Technology?

- ✔ 96-well plate design for batch detection of multiplexed factors up to 80 samples
- ✔ High sensitivity, as low as pg/mL
- ✔ Multi-factor assays performed with 50  $\mu$ L liquid sample and 200  $\mu$ g total protein
- ✔ Suitable for serum/plasma, culture supernatant, cells, tissue lysate, and other biological samples
- ✔ Maximized information in a single sample and cross-analysis allowed between analytes

### Instrument Platform



Luminex 200 instrument system:

- ✔ **Multi-path:** up to 80 analytes per sample using magnetic microspheres
- ✔ **Readout time:**  $\leq$ 45 min for 96-well plates (up to 12,800 assays/hour)
- ✔ **Dynamic range (typical):**  $\geq$ 3.5 logs

## Luminex Cytokine Panel at Creative Proteomics

### Human Luminex Panel List

Species	Analysis Targets	Specification	Analytes
Human	Cytokine/Chemokine	8-plex Panel	IL-2, IL-4, IL-6, IL-8, IL-10, GM-CSF, IFN- $\gamma$ , TNF- $\alpha$
		10-plex Panel	IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-10, IL-12(p70), IL-13, IFN- $\gamma$ , TNF- $\alpha$
		14-plex Panel	GM-CSF, IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12 (p70), IL-13, IL-15, IL-17A, IL-17F, IL-17E/IL-25, IL-21, IL-22, IL-23, IL-27, IL-28A, IL-31, IL-33, MIP-3 $\alpha$ /CCL20, TNF- $\alpha$ , TNF $\beta$
		23-plex Panel	6Ckine, BCA-1, CTACK, ENA-78, Eotaxin-2, Eotaxin-3, I-309, IL-16, IL-20, IL-21, IL-23, IL-28A, IL-33, LIF, MCP-2, MCP-4, MIP-1 $\delta$ , SCF, SDF-1, TARC, TPO, TRAIL, TSLP
		48-plex Panel A	sCD40L, EGF, Eotaxin, FGF-2, Flt-3 ligand, Fractalkine, G-CSF, GM-CSF, GRO $\alpha$ , IFN $\alpha$ 2, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-1ra, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12p40, IL-12p70, IL-13, IL-15, IL-17A, IL-17E/IL-25, IL-17F, IL-18, IL-22, IL-27, IP-10, MCP-1, MCP-3, M-CSF, MDC (CCL22), MIG, MIP-1 $\alpha$ , MIP-1 $\beta$ , PDGF-AA, PDGF-AB/BB, RANTES, TGF $\alpha$ , TNF $\alpha$ , TNF $\beta$ , VEGF-A
		48-plex Panel B	6Ckine, APRIL, BAFF, BCA-1, CCL28, sCD137, CTACK, CXCL16, ENA-78, Eotaxin-2, Eotaxin-3, sFAS, sFASL, GCP-2, Granzyme A, Granzyme B, HMGB1, I-309, IFN $\beta$ , IFN $\omega$ , IL-11, IL-16, IL-20, IL-21, IL-23, IL-24, IL-28A, IL-29, IL-31, IL-33, IL-34, IL-35, I-TAC, LIF, Lymphotactin, MCP-2, MCP-4, MIP-1 $\delta$ , MIP-3 $\alpha$ , MIP-3 $\beta$ , MPIF-1, Perforin, SCF, SDF-1, TARC, TPO, TRAIL, TSLP
		71-plex Panel	6Ckine, BCA-1, CTACK, EGF, ENA-78, Eotaxin, Eotaxin-2, Eotaxin-3, FGF-2, Flt3L, Fractalkine, G-CSF, GM-CSF, GRO $\alpha$ , I-309, IFN $\alpha$ 2, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-1RA, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12p40, IL-12p70, IL-13, IL-15, IL-16, IL-17A, IL-17E/IL-25, IL-17F, IL-18, IL-20, IL-21, IL-22, IL-23, IL-27, IL-28, IL-33, IP-10, LIF, MCP-1, MCP-2, MCP-3, MCP-4, M-CSF, MDC, MIG, MIP-1 $\alpha$ , MIP-1 $\beta$ , MIP-1 $\delta$ , PDGF-AA, PDGF-AB/BB, RANTES, sCD40L, SCF, SDF-1 $\alpha$ + $\beta$ , TARC, TGF $\alpha$ , TNF $\alpha$ , TNF $\beta$ , TPO, TRAIL, TSLP, VEGF-A
		96-plex Panel	6Ckine, APRIL, BAFF, BCA-1, CCL28, sCD137, sCD40L, CTACK, CXCL16, EGF, ENA-78, Eotaxin, Eotaxin-2, Eotaxin-3, sFas, sFasL, FGF-2, FLT-3L, Fractalkine, GCP-2, G-CSF, GM-CSF, Granzyme A, Granzyme B, GRO $\alpha$ , HMGB1, I-309, IFN- $\alpha$ 2, IFN $\beta$ , IFN $\omega$ , IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-1RA, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12p40, IL-12p70, IL-13, IL-15, IL-16, IL-17A, IL-17E/IL-25, IL-17F, IL-18, IL-20, IL-21, IL-22, IL-23, IL-24, IL-27, IL-28A, IL-29, IL-31, IL-33, IL-34, IL-35, IP-10, I-TAC, LIF, Lymphotactin, MCP-1, MCP-2, MCP-3, MCP-4, M-CSF, MDC, MIG/CXCL9, MIP-1 $\alpha$ , MIP-1 $\beta$ ,

			MIP-1 $\delta$ , MIP-3 $\alpha$ , MIP-3 $\beta$ , MPIF-1, PDGF-AA, PDGF-AB/BB, Perforin, RANTES, SCF, SDF-1, TARC, TGF $\alpha$ , TNF $\alpha$ , TNF $\beta$ , TPO, TRAIL, TSLP, VEGF-A.
Human	Inflammation	20-plex Panel	IL-12, CCL2, CCL3, CCL4, CD54, CXCL10, GM-CSF, IFN $\alpha$ , IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-10, IL-13, IL-17A, IL-4, IL-6, IL-8, sCD62E, sCD62P, TNF $\alpha$
		24-plex Panel	APRIL/TNFSF13, BAFF/TNFSF13B, Chitinase-3-like1, gp130/sIL-6R $\beta$ , IFN- $\beta$ , IL-11, IL-19, IL-20, IL-26, IL-27(p28), JIL-28A/IFN- $\lambda$ 2, IL-29/IFN- $\lambda$ 1, IL-32, IL-34, IL-35, LIGHT/TNFSF14, Osteocalcin, Pentraxin-3. sCD163, sCD30/TNFRSF8, sTNF-R1, sTNF-R2, TSLP, TWEAK/TNFSF12
		25-plex Panel	CCL2/MCP-1, CCL3/MIP-1 $\alpha$ , CCL4/MIP-1 $\beta$ , CCL11/Eotaxin, CCL24/Eotaxin-2, CXCL8/IL-8, CXCL9/MIG, CXCL13/BLC, G-CSF, GM-CSF, ICAM-1, IFN- $\gamma$ , IFN- $\gamma$ R1, IL-1 $\alpha$ , IL-1Ra, IL-2, IL-4, IL-5, IL-6, IL-10, IL-12(p70), IL-15, M-CSF, TNF- $\alpha$ , TNFRI
		37-plex Panel	APRIL/TNFSF13, BAFF/TNFSF13B, Chitinase-3-like1, gp130/sIL-6R $\beta$ , IFN- $\alpha$ 2, IFN- $\beta$ , IFN- $\gamma$ , IL-2, IL-8, IL-10, L-11, IL-12(p40), IL-12(p70), IL-19, IL -20, L-22, IL-26, L-27(p28), IL-28A/IFN- $\lambda$ 2, IL-29/IFN- $\lambda$ 1, IL-32, IL-34, IL-35, LIGHT/TNFSF14, MMP-1, MMP-2, MMP-3, Osteocalcin, Osteopontin, Pentraxin-3, sCD163, sCD30/TNFRSF8, sIL-6R $\alpha$ , sTNF-R1, sTNF-R2, TSLP, TWEAK/TNFSF12
Human	Immunoglobulin Isotyping	6-plex panel	IgA, IgG1, IgG2, IgG3, IgG4, IgM
Human	Growth Factor	11-Plex Panel	BDNF, BNGF, EGF, FGF-2(FGFbasic), HGF, LIF, PDGF-BB, PIGF, SCF, VEGF-A, VEGF-D
Human	Th17	15-Plex Panel	IL-1 $\beta$ , IL-4, IL-6, IL-10, IL-17A, IL-17F, IL-21, IL-22, IL-23, IL-25, IL-31, IL-33, IFN- $\gamma$ , sCD40L, TNF- $\alpha$ .
		25-Plex Panel	IL-4, IL-5, IL-6, IL-9, IL-10, IL-12(p70), IL-13, IL-15, IL-17A/CTLA8, IL-17E/IL-25, IL-17F, IL-1 $\beta$ , IL-2, IL-21, IL-22, IL-23, IL-27, IL-28A/IFN $\lambda$ 2, IL-31, IL-33, IFN-, GM-CSF, MIP-3 $\alpha$ /CCL20, TNF $\alpha$ , TNF $\beta$
Human	Th1/Th2	6-Plex Panel	IFN $\gamma$ , IL-4, IL-5, IL-6, IL-12p70, TNF-alpha
		9-Plex Panel	GM-CSF, IFN- $\gamma$ , IL-2, IL-4, IL-6, IL-8, IL-10, IL-13, TNF- $\alpha$
		11-Plex Panel	GM-CSF, IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-12p70, IL-13, IL-18, TNF- $\alpha$
		18-Plex Panel	GM-CSF, IFN- $\alpha$ , IFN- $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , I-1RA, IL-2, IL-4, IL-5, L-6, IL-7, -12p70, IL-13, IL-15, IL-18, IL-31, TNF- $\alpha$ , TNF- $\beta$
		20-Plex Panel	Eotaxin, GM-CSF, GRO $\alpha$ /CXCL1, IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, L-6, IL-8/CXCL8, IL-12p70, IL-13, IL-18, IP-10/CXCL10, MCP-1/CCL2, MIP-1 $\alpha$ /CCL3, MIP-1 beta/CCL4, Rantes, SDF1 $\alpha$ /CXCL12, TNF- $\alpha$

Human	Treg	7-Plex Panel	IL-9, IL-10, IL-17A, IL-21, IL-22, IL-23, IL-27
		12-Plex Panel	IL-2, IL-10, IL-12(p40), IL-12(p70), IL-19, IL-20, IL-22, IL-26, L-27(p28), IL-28A/IFN- $\lambda$ 2, IL-29/IFN- $\lambda$ 1, IL-35
		14-Plex Panel	IFN- $\alpha$ , IL-1 $\alpha$ , IL-1RA, IL-7, IL-9, IL-10, IL-15, IL-17A, IL-21, IL-22, IL-23, L-27, IL-31, TNF- $\beta$
		16-Plex Panel	Eotaxin, GRO $\alpha$ /CXCL1, IL-8/CXCL8, IL-9, IL-10, IL-17A, IL-21, IL-22, IL-23, IL-27, IP-10/CXCL10, MCP-1/CCL2, MIP-1 $\alpha$ /CCL3, MIP-1 $\beta$ /CCL4, Rantes, SDF 1 $\alpha$ /CXCL12
		18-Plex Panel	GM-CSF, IFN $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12p70, IL-13, IL-17A, IL-18, IL-21, IL-22, IL-23, IL-27, TNF $\alpha$
Human	TGF- $\beta$	3-Plex Panel	TGF- $\beta$ 1, TGF- $\beta$ 2, TGF- $\beta$ 3
Human	T Cell	13-Plex Panel	IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-7, IL-8/CXCL8, L-10, IL-12(p70), IL-13, IFN $\gamma$ , GM-CSF, TNF $\alpha$
		17-Plex Panel	IL-2, IL-4, IL-5, IL-6, IL-10, IL-13, IFN $\gamma$ , GM-CSF, Granzyme A, Granzyme B, MIP-1 $\alpha$ /CCL3, MIP-1 $\beta$ /CCL4, Perforin, sCD137/4-1BB, sFas, sFasL/ TNFRSF6, and TNF $\alpha$
		21-Plex Panel	IL-1 $\beta$ , IL-2, IL-21, IL-23, IL-4, IL-5, IL-6, IL-7, IL-8/CXCL8, IFN $\gamma$ , IL-10, L-12(p70), IL-13, IL-17A/CTLA8, Fractalkine/CX3CL1, GM-CSF, I-TAC/CXCL 11, MIP-1 $\alpha$ /CCL3, MIP-1 $\beta$ /CCL4, MIP-3 $\alpha$ /CCL20, TNF $\alpha$
	Soluble Cytokine Receptor	14-Plex Panel	sCD30, EGFR, sgp130, sIL-1R I, sIL-1R II, sIL-2R $\alpha$ , sIL-4R, sIL-6R, sRAGE, sTNFR I, sTNFR II, sVEGFR1/sFlt-1, sVEGFR2/sKDR/sFlk-1, sVEGFR3/sFlt-4
Human	Angiogenesis	17-Plex Panel	Angiopoietin-2, BMP-9, EGF, Endoglin, Endothelin-1, FGF-1/FGF- acidic, FGF-2/FGF- basic, Follistatin, G-CSF, HB-EGF, HGF, IL-8/CXCL8, Leptin, PLGF VEGF-A, VEGF-C, VEGF-D
		20-Plex Panel	Angiostatin/Kringle, Osteopontin (OPN), PDGF-AB/BB, sAXL, SCFR, sEGFR/sHER1/sErbB1, sE-Selectin, sHER2/sEGFR2/sErbB2, sHER3/sEGFR3, sHGFR/sc- Met, sIL-6Ra, sNeuropilin-1 (sNRP-1), sPECAM-1, sTIE-2, suPAR, sVEGFR1/sFlt1, sVEGFR2 /sFlk-1, sVEGFR3/sF1-4, TenascinC (TN-C), Thrombospondin -2(TSP-2)
Human	Cardiovascular	6-Plex Panel	ApoAI, ApoA II, ApoB, ApoC I, ApoC III, ApoE
		8-Plex Panel	dPAPP-A, Follistatin (FST), Pentraxin-3 (PTX3), sCD31/sPECAM-1, sE-Selectin, Thrombomodulin, Tissue Factor (TF), Troponin T (TnT)
		10-Plex Panel	ADAMTS13, D-dimer, GDF-15, Myeloperoxidase (MPO), Myoglobin, NGALLipocalin-2, SerumAmyloidA.sICAM-1, sP-Selectin, sVCAM-1

		11-Plex Panel	Adipsin, CRP, FetuinA, Fibrinogen, Haptoglobin, Platelet Factor4 (PF4), Senum AmyloidP, sL-Selectin, vonWillebrand Factor (vWF), $\alpha$ 1-AcidGlycoprotein (AGP), $\alpha$ -2-MacroglobulinF
		12-Plex Panel	CK-MB, CXCL16, Endocan (ESM-1), FABP3, FABP4, LIGHT, LIX/CXCL6/GCP-2, NP, NTproBNP, Oncostatin (OSM), Placental Growth Factor (PLGF), TroponinI (Tnl)
Human	Cancer Biomarker	5-Plex Panel	Antithrombin III, Complementary factor H (CFH), Extracellular matrix protein 1 (ECM1), Vitamin D binding protein, Vitronectin
		8-Plex Panel	Cathepsin D, Ferritin, Fibroblast activation protein (FAP), Galectin3, IGFBP3, Melanoma inhibitory activity (MIA), Myeloperoxidase (MPO), Sex hormone-binding globulin
		9-Plex Panel	DKK1, GDF15, Neuron-specificicenolase (NSE), Osteonectin (SPARC), Osteoprotegerin (OPG), Periostin, TRAP, TWEAK, YKL40
		10-Plex Panel	ALDH1A1, Carbonic Anhydrase 9, CD44, EpCAM, Hepsin, Kallikrein-6, Mesothelin, Midkine, NCAML/L1CAM/CD171, Transglutaminase 2 (TGM2)
		24-Plex Panel	CA125, CA15-3, CA19-9, CEA, CYFRA21-1, FGF-2/FGF-basic, HCG $\beta$ , HE4, HGF, IL-6, IL- 8/CXCL8, Leptin, MIF, Osteopontin (OPN), Prolactin, PSA (total), SCF, sFas, sFasL/TNFRSF6, TGF $\alpha$ , TNF $\alpha$ , TRAIL/TNFSF10, VEGF-A, $\alpha$ -Fetoprotein (AFP)
Human	Obesity	5-Plex Panel	Adiponectin, Adipsin, NGAL/Lipocalin-2, PAI-1 (total), Resistin
		9-Plex Panel	HGF, IL-1 $\beta$ , IL-6, IL-8/CXCL8, Insulin, Leptin, MCP-1/CCL2, NGF, TNF $\alpha$
		11-Plex Panel	Adiponectin, HGF, IL-1 $\beta$ , IL-6, IL-8/CXCL8, Leptin, MCP-1/CCL2, NGF, PAI-1(total), Resistin, TNF $\alpha$
Human	Metabolic	5-Plex Panel	Cortiso1, C-Peptide, Peptide YY, PP, Proinsulin
		5-Plex Panel	ANGPTL3, Chemerin, DPP4, ProteinS, SEPP
		7-Plex Panel	AAT, AGP-1, Hemopexin, RBP-4, Transferrin, Transthyretin, VDBP
		8-Plex Panel	FGF-21, FGF-23, Galectin-3, Omentin-1, Pentraxin-3, PON-1, sLeptinR, Vaspin
Human	Metabolic Hormone	13-P1ex Panel	Amylin (total), C-Peptide, Ghrelin(active)%, GIP (total), GLP-1 (total), Glucagon, L-6, Insulin, Leptin, MCP-1/CCL2, Pancreatic Polypeptide, PYY (total), TNF $\alpha$

Human	Coagulation	6-Plex Panel	Factor XI, Factor XII, Factor XIII, Antithrombin, Prothrombin, CRP
Human	IGFBP	7-Plex Panel	IGFBP1, IGFBP2, IGFBP3, IGFBP4, IGFBP5, IGFBP6, IGFBP7
Human	Liver Protein	9-Plex Panel	ANGPTL3, ANGPTL4, ANGPTL6, FABP1, FGF-19, FGF-21, FGF-23, HGF, alpha-Fetoprotein
Human	Pituitary	7-Plex Panel	ACTH, Agouti-Related Protein (AgRP), CNTF, FSH, GH, LH, TSH
Human	Kidney Injury (Urine)	3-Plex Panel	RBP4, Uromodulin, $\beta$ -2-Microglobulin
		6-Plex Panel	Calbindin, Clusterin, GST-pi, IL-18, KIM-1, MCP-1
		6-Plex Panel	Albumin, B2M, CystatinC, NGAL, Osteopontin, TFF3
		7-Plex Panel	Albumin, Clusterin, CystatinC, EGF, NGAL, Osteopontin (OPN), $\alpha$ -1-Microglobulin
		11-Plex Panel	Calbindin, CollagenIV, FABP1, GST $\alpha$ , GST $\pi$ , IP-10/CXCL10, KIM-1, Osteoactivin, Renin, TFF-3, TIMP-1
Human	Kidney Injury (Serum/Plasma)	4-Plex Panel	Clusterin, CystatinC, RBP4, $\beta$ -2-Microglobulin
		7-Plex Panel	CollagenIV, GST $\pi$ , NGA, Osteoactivin, TIMP-1, Uromodulin, alpha-1-Microglobulin
		8-Plex Panel	EGF, FABP1, GST $\alpha$ , IP-10/CXCL10, KIM-1, Osteopontin (OPN), PTH, Renin
Human	Neurodegenerative Disease	5-Plex Panel	A $\beta$ 1-40, A $\beta$ 1-42, GDNF, S100B, sRAGE
		6-Plex Panel	$\alpha$ -2-Antitrypsin, Complement C4, CRP, MIP-4/PARC, Serum Amyloid P (SAP), PEDF
		7-Plex Panel	$\alpha$ -2-Macroglobulin, ApoA I, ApoC III, ApoE, Complement C3, Complement factor H (CFH), Prealbumin/Transthyretin (TTR)
		10-Plex Panel	BDNF, CathepsinD, Myeloperoxidase (MPO), PAI-1 (total), PDGF-AA, PDGF-AB/BB, RANTES/CCL5, sICAM-1, sNCAM, sVCAM-1
Human	Neurological Disorders	4-Plex Panel	Ceruloplasmin (CP), Haptoglobin (HP), Serum Amyloid P, $\alpha$ -1-AcidGlycoprotein (AGP)

		7-Plex Panel	Angiotensinogen (AGT), Contactin-1, FetuinA, Kallikrein-6, Osteopontin (OPN), Soluble Superoxide Dismutase1 (sSOD1), Soluble Superoxide Dismutase2 (sSOD2)
Human	Neuropeptide	6-Plex Panel	Neurotensin, OrexinA, Oxytocin, SubstanceP, $\alpha$ -MSH, $\beta$ -Endorphin
Human	MMP	3-Plex Panel	MMP-3, MMP-12, MMP-13
		5-Plex Panel	MMP-1, MMP-2, MMP-7, MMP-9, MMP-10
		9-Plex Panel	MMP-1, MMP-2, MMP-3, MMP-7, MMP-8, MMP-9, MMP-10, MMP-12, MMP-13
Human	Diabetes	5-Plex Panel	C-Peptode, GLP-1(active), Glucagon, Insulin, Leptin
		10-Plex Panel	C-peptide, ghrelin, GIP, GLP-1, glucagon, insulin, leptin, PAI-1 (total), resistin, visfatin
Human	Bone Metabolism	Single-Plex Panel	RANKL
		13-Plex Panel	ACTH, DKK1, FGF-23, IL-1 $\beta$ , IL-6, Insulin, Leptin, Osteocalcin (OC), Osteopontin (OPN), Osteoprotegerin (OPG), PTH, Sclerostin (SOST), TNF $\alpha$
Human	Sepsis	2-Plex Panel	Elastase-2, Proteinase-3 (PRTN-3)
		3-Plex Panel	FGF-13, MMP-8, Olfactomedin-4 (OLFM-4)
		5-Plex Panel	Lactotransferrin (LTF), Neutrophil Elastase-2 (ELA2), NGA, Resistin, Thrombospondin-1
		6-Plex Panel	MIF, PAI-1 (total), sFas, sFasL/TNFRSF6, sICAM-1, sVCAM-1
		7-Plex Panel	Granzyme B, HSP70, L-1 $\alpha$ , IL-8/CXCL8, MIP-1 $\alpha$ /CCL3, MIP-1 $\beta$ /CCL4, MMP-8
Human	Complement	7-Plex Panel	C1q, C3, C3b, C4, FactorB, FactorH, Properdin
		8-Plex Panel	Adipson/FactorD, C2, C4b, C5, C5a, C9, Factor I, Mannose-bindinglectin (MBL)

Human	Myokine	15-Plex Panel	Apelin, BDNF, Fractalkine/CX3CL1, Erythropoietin (EPO), LIF, IL-15, SPARC/Osteonectin, Myostatin, FABP3, Irisin, FSTL-1, IL-6, Osteocrin/ Musclin, Oncostatin-M, FGF-21
Human	Amyloid beta and Tau	4-Plex Panel	A $\beta$ 1-40, A $\beta$ 1-42, Tau (Thr181), Tau (total)

#### Mouse Luminex Panel List

Species	Analysis Targets	Specification	Analytes
Mouse	Cytokine/Chemokine	10-Plex Panel	GM-CSF, IFN $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-10, IL-12p70, MCP-1, TNF $\alpha$
		18-Plex Panel	GM-CSF, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-7, IL-10, IL-12p70, IL-13, IL-17A, KC/CXCL1, LIX, MCP-1, MIP-2, TNF $\alpha$
		31-Plex Panel	Eotaxin, G-CSF, GM-CSF, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-9, IL-10, IL-12p40, IL-12p70, IL-13, IL-15, IL-17A, IP-10, KC, LIF, LIX, MCP-1, M-CSF, MIG, MIP-1 $\alpha$ , MIP-1 $\beta$ , MIP-2, RANTES, TNF $\alpha$ , VEGF-A
		44-Plex Panel	Eotaxin, Erythropoietin, 6Ckine, Fractalkine, G-CSF, GM-CSF, IFNB1, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-9, IL-10, IL-11, IL-12p40, IL-12p70, IL-13, IL-15, IL-16, IL-17, IL-20, IP-10, KC, LIF, LIX, MCP-1, MCP-5, M-CSF, MDC, MIG, MIP-1 $\alpha$ , MIP-1 $\beta$ , MIP-2, MIP-3 $\alpha$ , MIP-3B, RANTES, TARC, TIMP-1, TNF $\alpha$ , VEGF-A
Mouse	Cardiovascular Disease	3-Plex Panel	NGAL/Lipocalin-2, Pentraxin-3 (PTX3), Serum Amyloid A-3 (SAA-3)
		6-Plex Panel	Adipsin, $\alpha$ 1-AcidGlycoprotein (AGP), CRP, Haptoglobin, Serum Amyloid P, $\alpha$ -2-Macroglobulin
		7-Plex Panel	MMP-9, PAI-1(total), sCD31/sPECAM-1, sE-Selectin, sICAM, sP-Selectin, Tomomodulin
		9-Plex Panel	CXCL16, Endocan-1, Follistatin (FST), LIGHT, Oncostatin-M, Placental Growth Factor (PLGF-2), sCD40L, Troponin I (Tn I), Troponin T (TnT).
Mouse	Cancer Biomarker	27-Plex Panel	sALK-1, Amphiregulin, Angiopoietin-2 $\Delta$ , Betacellulin $\Delta$ , sCD31/sPECAM-1, EGF, Endoglin, Endothelin-1, sFasL/TNFRSF6, FGF-2/FGF-basic, Follistatin(FST), G-CSF, HGF, IL-1 $\beta$ , IL-6, IL-17A/CTLA8, KC/CXCL1, Leptin, MCP-1/CCL2, MIP-1 $\alpha$ /CCL3, Placental Growth Factor(PLGF-2), Prolactin SDF-1/CXCL12, TNF $\alpha$ , VEGF-A, VEGF-C, VEGF-D
Mouse	Th17	6-Plex Panel	IL-1 $\beta$ , IL-4, IL-6, IL-10, IL-17A, IFN- $\gamma$ , TNF- $\alpha$ .



		8-Plex Panel	CD40L, IL-17F, IL-21, IL-22, IL-23p19, IL-31, IL-33, MIP-3α
		25-Plex Panel	L-4, IL-5, IL-6, IL-10, IL-12 (p70), L-13, L-15, IL-17A/CTLA8, L-17E/IL-25, IL-17F, IL-1β, IL-2, IL-21, IL-22, IL-23, IL-27, IL-28B/IFNλ3, IL-31, IL-33, IFNγ, GM-CSF, MIP-3α/CCL20, sCD40L, TNFα, TNFβ
Mouse	Th1/Th2	6-Plex Panel	IFNγ, IL-4, IL-5, IL-6, IL-12p70, TNF-α
		7-Plex Panel	IFN-g, IL-1b, IL-2, IL-6, IL-10, IL-12(p70), TNF-α
		7-Plex Panel	IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, L-13
		8-Plex Panel	IL-2, IL-4, IL-5, IL-10, IL-12 (p70), GM-CSF, IFN-γ, TNF-α
		11-Plex Panel	GM-CSF, IFNγ, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-12p70, IL-13, IL-18, TNF-α
		20-Plex Panel	Eotaxin, GROα/KC/CXCL1, GM-CSF, IFNγ, IL-1β, L-2, IL-4, IL-5, IL-6, IL-12p70, IL-13, IL-18, IP-10, MCP-1, MCP-3, MIP-1α, MIP-1β, MIP-2, RANTES, TNFα
Mouse	Treg	6-Plex Panel	IL-9, IL-10, IL-17A, IL-22, IL-23, IL-27
		15-Plex Panel	IL-10, IL-17A, IL-22, IL-23, IL-27, IL-9, GROα, IP-10, MCP-1, MCP-3, MIP-1α, MIP-1β, MIP-2, RANTES, Eotaxin
		17-Plex Panel	GM-CSF, IFNγ, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12p70, IL-13, IL-17A, IL-18, IL-22, IL-23, IL-27, TNFα
Mouse	TGF-β	3-Plex Panel	TGF-β1, TGF-β2, TGF-β3
Mouse	T Cell	15-Plex Panel	IL-2, IL-4, IL-5, IL-6, IL-10, IL-13, IFNγ, GM-CSF, Granzyme B, MIP-1β/CCL4, RANTES/CCL5, sCD137/4-1BB/TNFRSF9, sFas, sFasL/TNFRSF6, TNFα
Mouse	MMPs	5-Plex Panel	MMP-2, MMP-3, MMP-8, proMMP-9, MMP-10
Mouse	Immunoglobulin Isotyping	6-Plex Panel	IgA, IgG1, IgG2α, IgG2b, IgG3, IgM
Mouse	Kidney Injury	5-Plex Panel	Clusterin, CystatinC, EGF, NGAL/Lipocalin-2, Osteopontin (OPN)

		6-Plex Panel	IP-10/CXCL10, KIM-1, Renin, TIMP-1, VEGF-A, $\beta$ -2-Microglobulin
Mouse	Obesity	Single-Plex Panel	Adiponectin
		7-Plex Panel	IL-6, Insulin, Leptin, MCP-1/CCL2, PAI-1 (total), Resistin, TNF $\alpha$
		7-Plex Panel	Adiponectin, IL-6, Leptin, MCP-1/CCL2, PAI-1 (total), Resistin, TNF $\alpha$
Mouse	Neuropeptide	6-Plex Panel	Neurotensin, OrexinA, Oxytocin, SubstanceP, $\alpha$ -MSH, $\beta$ -Endorphin
Mouse	Diabetes	8-Plex Panel	Ghrelin, GIP, GLP-1, Glucagon, Insulin, Leptin, PAI-1, Resistin
Mouse	Metabolic Hormone	14-Plex Panel	Amylin (total), C-Peptide2, Ghrelin(active)%, GIP (total), GLP-1 (total), Glucagon, IL-6, Insulin, Leptin, MCP-1/CCL2, Pancreatic Polypeptide, PYY (total), Resistin, TNF $\alpha$
Mouse	IGFBP	6-Plex Panel	IGFBP1, IGFBP2, IGFBP3, IGFBP5, IGFBP6, IGFBP7
Mouse	Pituitary	7-Plex Panel	ACTH, BDNF, FSH, GH, LH, Prolactin, TSH
Mouse	Bone Metabolism	Single-Plex Panel	RANKL
		10-Plex Panel	ACTH, DKK-1, FGF-23, IL-6, Insulin, Leptin, Osteocalcin (OC), Osteoprotegerin (OPG), Sclerostin (SOST), TNF $\alpha$

#### Rat Luminex Panel List

Species	Analysis Targets	Specification	Analytes
Rat	Cytokine/Chemokine	14-Plex Panel	IL-1 $\alpha$ , IL-1 $\beta$ , IL-10, IL-13, IL-2, IL-4, IL-6, ICAM-1, IFN- $\gamma$ , GM-CSF, L-Selectin, TIMP-1, TNF- $\alpha$ , VEGF
		27-Plex Panel	Eotaxin, EGF, Fractalkine, IFN $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-10, IL-12p70, IL-13, IL-17A, IL-18, IP-10, GRO/KC, TNF $\alpha$ , G-CSF, GM-CSF, MCP-1, Leptin, LIX, MIP-1 $\alpha$ , MIP-2, RANTES, VEGF-A

	8-Plex Panel	GRO $\alpha$ /KC/CINC1/CXCL1, MCP-1, MIP-1 $\alpha$ , Rantes, Eotaxin/CCL11, IP-10, MCP-3, MIP-2/Gro- $\beta$
Inflammation	9-Plex Panel	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-10, IL-13, IFN- $\gamma$ , TNF- $\alpha$
Th1/Th2	12-Plex Panel	L-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-10, IL-12p70, IL-13, GM-CSF, IFN- $\gamma$ , TNF- $\alpha$
Immunoglobulin Isotyping	Single-Plex Panel	IgE
	6-Plex Panel	IgA, IgG1, IgG2 $\alpha$ , IgG2b, IgG2c, IgM
Cardiovascular Disease	4-Plex Panel	Adiponectin, sE-Selectin, sICAM-1, von Willebrand Factor (vWF)
	4-Plex Panel	$\alpha$ -2-Macroglobulin (A2M), $\alpha$ 1-Acid Glycoprotein (AGP), Fibrinogen $\Delta$ , Haptoglobin
	6-Plex Panel	$\alpha$ 1-Acid Glycoprotein (AGP), Albumin, CystatinC, EGF, NGAL/Lipocalin-2, $\beta$ -2-Microglobulin
	7-Plex Panel	Cardiac Troponin I (cTnI), Cardiac Troponin T (cTnT), Creatine Kinase Myocle (CKM), FABP3, Follistatin-like Protein1 (FSTL1), Myosin Light Chain3 (MYL3), TIMP-1
	8-Plex Panel	Calbindin, Clusterin, GST $\alpha$ , IP-10/CXCL10, KIM-1, Osteopontin (OPN), TIMP-1, VEGF-A
	9-Plex Panel	Caveolin-1, Connective Tissue Growth Factor (CTGF), GRO $\alpha$ /KC/CINC-1/CXCL1, IL-6, MCP-1/CCL2, PAI-1(total), TIMP-1, TNF $\alpha$ , VEGF-A
Metabolic Hormone	12-Plex Panel	Amylin(active)*, C-Peptide 2, GIP(total), GLP-1(active)*, Ghrelin(active)*, Glucagon*, Insulin, Leptin, PP, PYY, Resistin (mouse only), Secretin
Neuropeptide	6-Plex Panel	Neurotensin, OrexinA, Oxytocin, SubstanceP, $\alpha$ -MSH, $\beta$ -Endorphin
Bone Metabolism	8-Plex Panel (Serum/Plasma)	ACTH, DKK1, FGF-23, Insulin, Leptin, Osteoprotegerin (OPG), PTH, Sclerostin (SOST)
	10-Plex Panel (Cell culture)	ACTH, DKK-1, FGF-23, Insulin, Leptin, Osteocalcin (OC), Osteoprotegerin (OPG), Osteopontin (OPN), PTH, Sclerostin (SOST)
Kidney Injury	3-Plex Panel	Albumin, Cystatin C, Lipocalin-2/NGAL

	6-Plex Panel A	Clusterin, GST $\alpha$ , IP-10, KIM-1, OPN – Osteopontin, TIMP-1, VEGF
	6-Plex Panel B	$\alpha$ 1-Acid Glycoprotein (AGP), Albumin, CystatiC, EGF, NGAL/Lipocalin-2, $\beta$ -2-Microglobulin
Liver Injury	5-Plex Panel	5NT/CD73, ARG1, GOT1, GST $\alpha$ , SDH
Adiponectin	Single-Plex Panel (Serum/Plasma)	Adiponectin
Stress Hormone	3-Plex Panel	ACTH, Corticosterone, Melatonin
Thyroid	6-Plex Panel	Cortisol, Estradiol, Progesterone, T3(Total), T4 (Total), Testosterone
Adipokine	7-Plex Panel (Serum/Plasma)	IL-1 $\beta$ , IL-6, Insulin, Leptin, MCP-1/CCL2, PAI-1(total), TNF $\alpha$
Adipocyte	7-Plex Panel (Cell culture)	Adiponectin, IL-1 $\beta$ , IL-6, Leptin, MCP-1, PAI-1 (Total), TNF $\alpha$
Pituitary	7-Plex Panel	Adiponectin, IL-1 $\beta$ , IL-6, Leptin, PAI-1 (total), TNF $\alpha$ , MCP-1

#### Non-Human Primate Luminex Panel List

Species	Analysis Targets	Specification	Analytes
NHP	Cytokine/Chemokine	7-Plex Panel	BDNF, FGF-basic, PDGF-BB, SCF, VEGF-A, VEGF-D, bNGF
		10-Plex Panel	IL-8, IP-10, MCP-1, MIP-11, MIP-1 $\beta$ , Eotaxin, SDF-1, BLC/CXCL13, I-TAC/CXCL11, MIG/CXCL9
		10-Plex Panel	GM-CSF, IL-1 $\alpha$ , IL-5, IL-7, IL-12/IL-23p40, IL-15, IL-16, IL-17A, TNF- $\beta$ , VEGF-A
		23-Plex Panel	G-CSF, GM-CSF, IFN- $\gamma$ , IL-1ra, IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12/23 (p40), IL-13, IL-15, IL-17, IL-18, MCP-1, MIP-1 $\alpha$ , MIP-1 $\beta$ , sCD40L, TGF- $\alpha$ , TNF- $\alpha$ , VEGF

	24-Plex Panel	sCD137, Eotaxin/CCL11, sFasL, FGF-2, Fractalkine/CX3CL1, Granzyme A, Granzyme B, IL-1 $\alpha$ , IL-2, IL-4, IL-6, IL-16, IL-17A, IL-17E/IL-25, IL-21, IL-22, IL-23, IL-28A, IL-31, IL-33, IP-10/CXCL10, MIP-3 $\alpha$ /CCL20, Perforin, RANTES/CCL5, TNF $\beta$ /LTA
	25-Plex Panel	sCD137, Eotaxin/CCL11, sFasL, FGF-2, Fractalkine/CX3CL1, Granzyme A, Granzyme B, IL-1 $\alpha$ , IL-2, IL-4, IL-6, IL-16, IL-17A, IL-17E/IL-25, IL-21, IL-22, IL-23, IL-28A, IL-31, IL-33, IP-10/CXCL10, MIP-3 $\alpha$ /CCL20, Perforin, RANTES/CCL5, RANTES/CCL5, TNF $\beta$ /LTA
Proinflammatory	9-Plex Panel	IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-8, IL-10, IL-12/IL-23p40, TNF- $\alpha$
T-Cell	12-Plex Panel	GM-CSF, IFN- $\gamma$ , IL-2, IL-4, IL-9, IL-10, IL-13, IL-17A, IL-17F, IL-22, MIP-3 $\alpha$ , TNF- $\alpha$
TGF- $\beta$	3-Plex Panel	TGF- $\beta$ 1, TGF- $\beta$ 2, TGF- $\beta$ 3
TH1/TH2	9-Plex Panel	IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-8, IL-10, IL-12p70, TNF- $\alpha$
TH17	9-Plex Panel	IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-8, IL-10, IL-17A, TNF- $\alpha$
Metabolic Hormone	12-Plex Panel	Amylin (Active), C-Peptide, Ghrelin (Active), GIP, Glucagon Like Peptide-1, Glucagon, IL-6, Insulin, Leptin, MCP-1, PP, PYY
Pituitary	2-Plex Panel	BDNF, Prolactin
	7-Plex Panel	ACTH, AgRP, CNTF, FSH, GH, LH, TSH
Diabetes	11-Plex Panel	Adipsin, C-peptide, Ghrelin, GIP, GLP-1, Glucagon, Insulin, Leptin, PAI-1, Resistin, Visfatin

#### Porcine Luminex Panel List

Species	Analysis Targets	Specification	Analytes
Porcine	Cytokine/Chemokine	9-Plex Panel	IL-1 $\beta$ , IL-4, IL-6, IL-8, IL-10, IL-12p40, IFN $\alpha$ , IFN $\gamma$ , TNF $\alpha$
		13-Plex Panel	GM-CSF, IFN $\gamma$ , IL-10, IL-12, IL-18, IL-1Ra, IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-8, TNF $\alpha$

Porcine	Thyroid	6-Plex Panel	Cortisol, Estradiol, Progesterone, T3(Total), T4 (Total), Testosterone
Porcine	TGFβ	3-Plex Panel	TGFβ1, TGFβ2, TGFβ3

#### Canine Luminex Panel List

Species	Analysis Targets	Specification	Analytes
Canine	Cytokine	11-Plex Panel	IFNγ, IL-2, IL-6, JIL-8/CXCL8, IL-10, IL-12p40, MCP-1(CCL2), NGFβ, SCF, TNFα, VEGF-A
		13-Plex Panel	GM-CSF, IFNγ, IL-10, IL-15, IL-18, IL-2, IL-6, IL-7, IL-8/CXCL8, IP-10/CXCL10, KC-like, MCP-1/CCL2, TNFα
Canine	Metabolism	9-Plex Panel	Amylin (total), Ghrelin (active)%, GIP (total), GLP-1 (active), Glucagon, Insulin, Leptin, Pancreatic Polypeptide, PYY (total)
Canine	Pituitary	7-Plex Panel	ACTH, BDNF, FSH, GH, LH, Prolactin, TSH
Canine	Kidney Injury	4-Plex Panel	Clusterin, KIM-1, MCP-1, NGAL
		4-Plex Panel (Urine)	Albumin, RBP4, TFF3, β-2-Microglobulin
		7-Plex Panel (Urine)	Clusterin, CystatinC, IL-8/CXCL8, KIM-1, MCP-1/CCL2, NGAL/Lipocalin-2, Osteopontin
Canine	Thyroid	6-Plex Panel	Cortisol, Estradiol, Progesterone, T3(Total), T4 (Total), Testosterone
Canine	TGFβ	3-Plex Panel	TGFβ1, TGFβ2, TGFβ3

#### Feline Luminex Panel List

Species	Analysis Targets	Specification	Analytes
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<b>Feline</b>	Cytokine	19-Plex Panel	F1t3 Ligand、GM-CSF、GRO/KC、IFN $\gamma$ 、IL-12(p40)、IL-13、IL-18、IL-1 $\beta$ 、IL-2、IL-4、IL-6、IL-8/CXCL8、MCP-1/CCL2、PDGF-BB、RANTES/CCL5、SCF、SDF-1/CXCL12、sFas、TNF $\alpha$
<b>Feline</b>	Metabolic Hormone	9-Plex Panel	Amylin (total), Ghrelin(active)%, GIP (total), GLP-1 (total), Glucagon, Insulin, Leptin, Pancreatic Polypeptide, PYY (total)

#### Equine Luminex Panel List

Species	Analysis Targets	Specification	Analytes
<b>Equine</b>	Cytokine	23-Plex Panel	Eotaxin/CCL11、FGF-2、Fractalkine/CX3CL1、G-CSF、GM-CSF、GRO、IFN $\gamma$ 、IL-1 $\alpha$ 、IL-1 $\beta$ 、IL-2、IL-4、IL-5、IL-6、IL-8/CXCL8、IL-10、IL-12(p70)、L-13、IL-17A/CTLA8、IL-18、IP-10/CXCL10、MCP-1/CCL22、RANTES/CCL5、TNF $\alpha$