



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Antibodies			
Immunoglobulin A (IgA)	Cyno, Human	MSD	Serum
Immunoglobulin E (IgE)	Human	MSD	Serum
Immunoglobulin G (IgG)	Cyno, Human	MSD	Serum
Immunoglobulin M (IgM)	Cyno, Human	MSD	Serum
Immunoglobulin IgA, IgG1, IgG2a, IgG2b, IgG3, IgM	Mouse	MSD	Serum
Total IgE	Mouse	ELISA	Serum, Plasma
Total IgG, IgM	Rat, Dog, Cyno	ELISA	Serum
Anti-KLH IgG/IgM (immunotox, TDAR)	Rat, Cyno	ELISA	Serum
Bone Disorders			
Human Alkaline Phosphatase (ALP)	Human	MSD	Serum, Plasma
Bone Morphogenetic protein 2 (BMP-2)	Human	MSD	Serum, Plasma
Bone Morphogenetic protein 4 (BMP-4)	Human	MSD	Serum, Plasma
Bone Morphogenetic protein 7 (BMP-7)	Human	MSD	Serum, Plasma
Bone Morphogenetic protein 9 and growth differentiation factor 2 (BMP-9/GDF-2)	Human	MSD	Serum, Plasma
Bone-specific Alkaline Phosphatase (BAP)	Cyno	ELISA	Serum
C-terminal telopeptides of Type 1 collagen (CTX)	Rat, Dog	ELISA	Serum
Fibronectin	Human	MSD	Serum, Plasma, Urine, Synovial Fluid
Intact Parathyroid hormone (iPTH)	Rat, Cyno	ELISA	Serum, Plasma
Osteocalcin	Rat, Dog	ELISA	Serum
Osteocalcin (OCL)	Human	MSD	Serum, Plasma
Osteonectin (ONN)	Human	MSD	Serum, Plasma, Urine
Osteopontin (OPN)	Rat, Human	MSD	Plasma, Urine
Osteoprotegerin (OPGN)	Human	MSD	Serum, Plasma
Sclerostin (SOST)	Human	MSD	Serum, Plasma
Cardiovascular			
Alpha-2-Macroglobulin (A2M)	Rat	ELISA	Serum
Alpha-2-Macroglobulin (A2M)	Rat, Human	MSD	Serum, Plasma, Urine
Angiopoietin-1 (Ang-1)	Human	MSD	Serum, Plasma, Urine
Angiopoietin-2 (Ang-2)	Human	MSD	Serum, Plasma, Cerebrospinal Fluid (CSF),



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			Urine
Basic Fibroblast Growth Factor (FGF basic)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Carbonic Anhydrase 1 (CA1)	Human	MSD	Plasma
Cellular Inhibitor of Apoptotic Proteins 1 (cIAP1)	Human	MSD	Cell Lysate
Cellular Inhibitor of Apoptotic Proteins 2 (cIAP2)	Human	MSD	Cell Lysate
CD31/PECAM-1	Human	MSD	Serum, Plasma
Corin/ATC2	Human	MSD	Serum, Plasma, Urine
C-Reactive Protein (CRP)	Human	MSD	Serum, Plasma
Creatine Kinase (CK)	Rat	MSD	Serum, Plasma, cell culture supernatants
Endoglin	Human	MSD	Serum, Plasma, Urine
Eotaxin (CCL11)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Eotaxin-3 (CCL26)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
E-Selectin	Human	MSD	Serum, Plasma, Urine
Fatty Acid Binding Protein 3 and Heart-type fatty acid-binding protein (FABP3/H-FABP)	Mouse, Rat, Human	MSD	Serum, Plasma
Glucagon-like peptide-1 Total (GLP-1Active)	Cyno, Dog, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Glucagon-like peptide-1 Total (GLP-1Total)	Cyno, Dog, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Haptoglobin	Mouse	ELISA	Serum
Haptoglobin	Human	MSD	Plasma
Hemoglobin alpha	Human	MSD	Serum, Plasma
Hemopexin	Human	MSD	Serum, Plasma
Hepatocyte Growth Factor (HGF)	Human	MSD	Serum, Plasma
Hepcidin	Human	MSD	Serum, Plasma
HIF-1 α	Mouse, Rat, Human	MSD	Whole Cell Lysate
Intercellular adhesion molecule 1 (ICAM-1)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Intercellular adhesion molecule 1 (ICAM-3)	Human	MSD	Serum, Plasma, Urine
Interferon gamma (IFN- γ)	Dog	ELISA	Serum
Interferon gamma (IFN- γ)	Cyno, Rat, Mouse	CBA	Serum, BALF
Interferon gamma (IFN- γ)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants



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Interleukin 1 alpha (IL-1 α)	Rat	CBA	BALF
Interleukin 1 alpha (IL-1 α)	Cyno, Rat, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 beta (IL-1 β)	Mouse, Cyno	CBA	Serum
Interleukin 1 beta (IL-1 β)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 2 (IL-2)	Cyno, Rat	CBA	Serum
Interleukin 2 (IL-2)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 4 (IL-4)	Cyno	CBA	Serum
Interleukin 4 (IL-4)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 5 (IL-5)	Cyno, Rat	CBA	Serum
Interleukin 5 (IL-5)	Dog	ELISA	Serum
Interleukin 5 (IL-5)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 6 (IL-6)	Cyno, Mouse, Rat	CBA	Serum, BALF
Interleukin 6 (IL-6)	Rat, Dog, Cyno, Mouse	ELISA	Serum, BALF
Interleukin 6 (IL-6)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 7 (IL-7)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 8 (IL-8)	Dog, Cyno	ELISA	Serum, BALF
Interleukin 8 (IL-8)	Cyno	CBA	Serum
Interleukin 8 (IL-8)	Dog, Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 8 (IL-8 HA)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 10 (IL-10)	Cyno, Rat	CBA	Serum, BALF
Interleukin 10 (IL-10)	Dog	ELISA	Serum
Interleukin 10 (IL-10)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 and Interleukin 23 p40 (IL-12/IL-23p40)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 p70 (IL-12p70)	Rat	CBA	Serum, BALF
Interleukin 12 p70 (IL-12p70)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 13 (IL-13)	Cyno, Mouse	CBA	Serum
Interleukin 13 (IL-13)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 15 (IL-15)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 16 (IL-16)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants



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Interleukin 17A (IL-17A)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
IP-10 (CXCL10)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Lipopolysaccharide binding protein (LBP)	Human	MSD	Serum, Plasma
Met (Soluble)	Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 3 Total (MMP-3 Total)	Mouse, Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 7 (MMP-7)	Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 9 Active (MMP-9 Active)	Human	MSD	Serum, Plasma, Urine
Monocyte Chemoattractant Protein 1 (MCP-1/CCL2)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Monocyte Chemoattractant Protein 4 (MCP-4/CCL13)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Macrophage-derived chemokine (MDC)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
MIP-1 α (CCL3)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
MIP-1 β (CCL4)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Myosin light chain 3/ Cardiac Myosin Light Chain 1 (My13/CMLC1)	Mouse, Rat	MSD	Serum, Plasma
Myeloperoxidase (MPO)	Human	MSD	Serum, Plasma
N-terminal pro-atrial natriuretic peptide (NT-proANP)	Rat	MSD	Serum, Plasma
N-terminal pro-brain (or B-type) natriuretic peptide (NT-proBNP)	Rat, Human	MSD	Serum, Plasma
Placental Growth Factor (PLGF)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Platelet-derived Growth Factor subunit A (PDGF-A)	Human	MSD	Serum, Plasma
P-Selectin	Human	MSD	Serum, Plasma, Urine
Serpin E1 (Active)	Human	MSD	Serum, Plasma
Serpin E1 (Inactive)	Human	MSD	Serum, Plasma
Serpin E1 (Total)	Human	MSD	Serum, Plasma
Serpin F2	Human	MSD	Serum, Plasma
Serum amyloid A (SAA)	Dog	ELISA	Serum
Serum amyloid A (SAA)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Stem Cell growth Factor Receptor (SCFR)	Human	MSD	Serum, Plasma, Whole Cell Lysate



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Sphingosine kinase 1 (SPK 1)	Human	MSD	Serum, Plasma
TARC (CCL17)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Tyrosine kinase 2 (Tie-2)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Tissue Inhibitor of Metalloproteinases-1 (TIMP-1)	Rat, Human	MSD	Serum, Plasma
Transforming Growth Factor beta 1 (TGF- β 1)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Thrombomodulin	Human	MSD	Serum, Plasma, Urine
Troponin I (Cardiac)/Cardiac Troponin I (cTnI)	Rat, Dog, Cyno	ELISA	Serum
Troponin I (Cardiac)	Mouse, Rat, Human	MSD	Serum, Plasma
Troponin I (Fast-Twitch)	Mouse, Rat	MSD	Serum, Plasma
Troponin ITC Complex	Rat	MSD	Serum, Plasma
Troponin T (Cardiac)	Rat, Human	MSD	Serum, Plasma
Tumor Necrosis Factor alpha (TNF- α)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Tumor Necrosis Factor beta (TNF- β)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Vascular cell adhesion molecule 1 (VCAM-1/CD106)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Vascular Endothelial Growth Factor-A (VEGF-A)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Vascular Endothelial Growth Factor-C (VEGF-C)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Vascular Endothelial Growth Factor-D (VEGF-D)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Vascular Endothelial Growth Factor Receptor 1/Fms-like tyrosine kinase 1 (VEGFR-1/Flt-1)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
Vascular Endothelial Growth Factor Receptor 2 (VEGFR-2/KDR)	Human	MSD	Serum, Plasma
Vascular Endothelial Growth Factor Receptor 3/Fms-like tyrosine kinase 4 (VEGFR-3/Flt-4)	Human	MSD	Serum, Plasma
von Willebrand Factor (vWF)	Human	MSD	Plasma
Complement			
Bb fragment	Cyno	ELISA	Plasma
C1q receptor	Mouse	MSD	Serum, Plasma



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Complement C3	Human	MSD	Plasma
Complement C3a	Human	MSD	Plasma
Complement C3a fragment (C3adesArg)	Cyno	ELISA	Plasma
Complement C9	Human	MSD	Plasma
Complement Factor D	Human	MSD	Plasma
CH50, total complement activity	Rat, Dog, Cyno	ELISA	Serum
Terminal Complement Complex (TCC / SC5b-9)	Cyno	ELISA	Serum
Cytokines & Chemokines			
B7-H6	Human	MSD	Serum, Plasma
CCL2 (MCP-1)	Cyno	ELISA	Serum
CCL2 (MCP-1)	Cyno, Mouse, Rat	CBA	Serum, BALF
CCL2 (MCP-1)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL3 (MIP1- α)	Mouse	CBA	Serum, BALF
CCL3 (MIP1- α)	Rat	ELISA	Serum
CCL3 (MIP1- α)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL4 (MIP1- β)	Rat	ELISA	Serum
CCL4 (MIP1- β)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL5 (RANTES)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CCL7 (MCP-3)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CCL8 (MCP-2)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CCL11 (EOTAXIN)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL12 (MCP-5)	Mouse	MSD	Serum, Plasma
CCL13 (MCP-4)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL15 (MIP-5)	Human	MSD	Serum, Plasma, cell culture supernatants
CCL17 (TARC)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL18 (MIP-4)	Human	MSD	Serum, Plasma, cell culture supernatants
CCL19 (MIP-3 β)	Human	MSD	Serum, Plasma, cell culture supernatants
CCL20 (MIP-3 α)	Human	MSD	Serum, Plasma, cell culture supernatants



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CCL24 (EOTAXIN-2)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CCL25 (TECK)	Human	MSD	Serum, Plasma
CCL26 (EOTAXIN-3)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL27 (CTACK)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture media
CXCL1 (KC)	Rat	CBA	Serum, BALF
CXCL1 (KC)/(KC)GRO	Rat, Mouse	MSD	Serum, Plasma, cell culture supernatants
CXCL1/ GRO- α	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL2 (CINC-3 / MIP-2)	Rat	ELISA	Serum, BALF
CXCL2 (MIP-2)	Mouse	MSD	Serum, Plasma, cell culture supernatants
CXCL4 (PF-4)/ PF-4/CXCL4	Mouse	MSD	Serum, Plasma
CXCL5 (ENA-78)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL9 (MIG)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL10 (IFN- γ -induced protein 10, IP-10)	Cyno	ELISA	Serum
CXCL10 (IFN- γ -induced protein 10, IP-10)	Cyno	CBA	Serum
CXCL10 (IFN- γ -induced protein 10, IP-10)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL11 (I-TAC)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL12 (SDF-1)	Cyno	ELISA	Serum
CXCL12 (SDF-1 α)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL13 (BCA-1/BLC)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CX3CL1 (Fractalkine)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Granulocyte colony-stimulating factor (G-CSF)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF)	Rat, Cyno	CBA	Serum, BALF
Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Interferon alpha (IFN- α)	Cyno	CBA	Serum
Interferon alpha (IFN- α)	Mouse	ELISA	Serum, BALF
Interferon alpha (IFN- α)	Mouse	MSD	Serum, Plasma, cell culture supernatants
Interferon alpha (IFN- α 2a)	Cyno, Human	MSD	Serum, Plasma, cell culture



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Interferon beta (IFN-β)	Cyno	CBA	supernatants
Interferon beta (IFN-β)	Mouse, Human	MSD	Serum
Interferon gamma (IFN-γ)	Dog	ELISA	Serum, Plasma, cell culture supernatants
Interferon gamma (IFN-γ)	Cyno, Rat, Mouse	CBA	Serum
Interferon gamma (IFN-γ)	Cyno, Rat, Mouse, Human	MSD	Serum, BALF
Interleukin 1 alpha (IL-1α)	Rat	CBA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 alpha (IL-1α)	Cyno, Rat, Human	MSD	BALF
Interleukin 1 beta (IL-1β)	Mouse, Cyno	CBA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 beta (IL-1β)	Cyno, Rat, Mouse, Human	MSD	Serum
Interleukin 1 receptor antagonist (IL-1RA)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 receptor-like 1 and STD2 (IL1RL1/ST2)	Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 2 (IL-2)	Cyno, Rat	CBA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 2 (IL-2)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum
Interleukin 2 receptor alpha (IL-2R α/sCD25)	Cyno	ELISA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 2 receptor alpha (IL-2R α)	Cyno, Human	MSD	Serum, Plasma
Interleukin 3 (IL-3)	Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 4 (IL-4)	Cyno	CBA	Serum, Plasma, cell culture supernatants
Interleukin 4 (IL-4)	Cyno, Rat, Mouse, Human	MSD	Serum
Interleukin 5 (IL-5)	Cyno, Rat	CBA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 5 (IL-5)	Dog	ELISA	Serum
Interleukin 5 (IL-5)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 6 (IL-6)	Cyno, Mouse, Rat	CBA	Serum, BALF
Interleukin 6 (IL-6)	Rat, Dog, Cyno, Mouse	ELISA	Serum, BALF
Interleukin 6 (IL-6)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 6 receptor (IL-6R)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 7 (IL-7)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 8 (IL-8)	Dog, Cyno	ELISA	Serum, Plasma, Urine, cell culture supernatants
Interleukin 8 (IL-8)	Cyno	CBA	Serum, BALF
			Serum



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Interleukin 8 (IL-8)	Dog, Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 8 (IL-8 HA)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 9 (IL-9)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 10 (IL-10)	Cyno, Rat	CBA	Serum, BALF
Interleukin 10 (IL-10)	Dog	ELISA	Serum
Interleukin 10 (IL-10)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 Total (IL-12 Total)	Mouse	MSD	Serum, Plasma, cell culture supernatants
Interleukin 12 p40 (IL-12p40)	Cyno	CBA	Serum
Interleukin 12 and Interleukin 23 p40 (IL-12/IL-23p40)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 p70 (IL-12p70)	Rat	CBA	Serum, BALF
Interleukin 12 p70 (IL-12p70)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 13 (IL-13)	Cyno, Mouse	CBA	Serum
Interleukin 13 (IL-13)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 15 (IL-15)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 16 (IL-16)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 17 A (IL-17A)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 17 A/F (IL-17A/F)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 B (IL-17B)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 C (IL-17C)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 D (IL-17C)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 E and Interleukin 25 (IL-17E/IL-25)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 F (IL-17C)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 18 (IL-18)	Cyno	ELISA	Serum
Interleukin 18 (IL-18)	Rat	CBA	Serum, BALF
Interleukin 18 (IL-18)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 21 (IL-21)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 22 (IL-22)	Cyno, Mouse,	MSD	Serum, Plasma, cell culture



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	Human		supernatants
Interleukin 23 (IL-23)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 27 (IL-27)	Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 27 p28 and interleukin 30 (IL-27p28/IL-30)	Mouse	MSD	Serum, Plasma, cell culture supernatants
Interleukin 29 and Interferon Lambda 1 (IL-29/IFN- λ 1)	Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 31 (IL-31)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 33 (IL-33)	Rat	CBA	Serum, BALF
Interleukin 33 (IL-33)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Macrophage colony-stimulating factor (M-CSF)	Human	MSD	Serum, Plasma, cell culture supernatants
Matrix Metalloproteinase 1 (MMP- 1)	Human	MSD	Serum, Plasma
Matrix Metalloproteinase 2 (MMP- 2)	Human	MSD	Serum, Plasma
Matrix Metalloproteinase 3 Total (MMP-3 Total)	Mouse, Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 7 (MMP- 7)	Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 8 (MMP- 8)	Human	MSD	Serum, Plasma
Matrix Metalloproteinase 9 active (MMP-9 Active)	Human	MSD	Serum, Plasma
Matrix Metalloproteinase 9 Total (MMP-9 Total)	Mouse, Human	MSD	Serum, Plasma
Matrix Metalloproteinase 10 (MMP-10)	Human	MSD	Serum, Plasma
Macrophage migration inhibitory factor (MIF)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
MPIF-1/CCL23	Human	MSD	Serum, Plasma
Platelet-derived Growth Factor subunit B (PDGF-B)	Human	MSD	Serum, Plasma
P-Selectin Glycoprotein Ligand-1 (PSGL-1)	Human	MSD	Plasma
Tenascin C	Human	MSD	Serum, Plasma, Urine
Transforming growth factor beta 1 (TGF- β 1)	Rat	ELISA	Lung extract
Transforming growth factor beta 1 (TGF- β 1)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Transforming growth factor beta 2 (TGF- β 2)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants



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Transforming growth factor beta 3 (TGF-β3)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Tumor Necrosis Factor (TNF)	Rat, Cyno, Mouse	CBA	Serum, BALF
Tumor Necrosis Factor (TNF)	Dog, Mouse	ELISA	Serum, BALF
Tumor Necrosis Factor alpha (TNF-α)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Tumor Necrosis Factor beta (TNF-β)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Tumor Necrosis Factor receptor 1 (TNF- RI)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
sTNF RI (TNFRp55)	Cyno	ELISA	Serum
Tumor Necrosis Factor receptor 2 (TNF- RII)	Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
sTNF RII (TNFRp75)	Cyno	ELISA	Serum
Thrombopoietin (TPO)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
TNF-related apoptosis-inducing ligand (TRAIL)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
TSLP	Human	MSD	Serum, Plasma, cell culture supernatants
YKL-40	Human	MSD	Serum, Plasma, cell culture supernatants
6CKine/CCL21	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Damage Biomarker			
Albumin	Rat, Mouse	ELISA	Serum, BALF, Urine
Albumin	Human	MSD	Serum, Plasma, Urine
Alpha 1 Acid GlycoProtein (AGP)	Rat, Human	MSD	Plasma
Alpha-2-Macroglobulin (A2M)	Rat	ELISA	Serum
Alpha-2-Macroglobulin (A2M)	Rat, Human	MSD	Serum, Plasma, Urine
Angiopoietin-2 (Ang-2)	Human	MSD	Serum, Plasma, Cerebrospinal Fluid (CSF), Urine
Annexin A1	Human	MSD	Serum, Plasma
Apolipoprotein-B (ApoB)	Cyno	ELISA	Plasma
Beta 2 Microglobulin (B2M)	Rat	ELISA	Serum, Urine
Beta 2 Microglobulin (B2M)	Rat, Human	MSD	Serum, Plasma, Urine
Cardiac Troponin I (cTnI)	Rat, Dog, Cyno	ELISA	Serum
Cardiac Troponin I	Mouse, Rat, Human	MSD	Serum, Plasma
Cardiac Troponin T	Rat, Human	MSD	Serum, Plasma
Clusterin	Rat	ELISA	Serum, Urine
Clusterin	Mouse, Rat, Human	MSD	Plasma, Urine



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
C-Reactive Protein (CRP)	Rat, Dog, Cyno, Rabbit, Mouse	ELISA	Serum, Plasma
C-Reactive Protein (CRP)	Human	MSD	Serum, Plasma
Cystatin C	Rat	ELISA	Serum, Urine
Cystatin C	Mouse, Rat, Human	MSD	Serum, Plasma, Urine
Factor VII (F7)	Cyno	ELISA	Serum
Factor VII (F7)	Human	MSD	Serum, Plasma
Glutathione S transferase Alpha (αGST)	Rat, Human	MSD	Serum, Plasma, Urine
Kidney injury marker 1 (KIM-1)	Rat	ELISA	Serum, Urine
Kidney injury marker 1 (KIM- 1/HAVCR1/TIM-1)	Rat, Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 1 (MMP- 1)	Human	MSD	Serum, Plasma, Urine
Myeloperoxidase (MPO)	Human	MSD	Serum, Plasma
N-Acetyl-β-(D)-Glucosaminidase (NAG)	Rat	Enzymatic	Serum, Urine
Neutrophil gelatinase-associated lipocalin (NGAL)	Rat	ELISA	Serum, Urine
Neutrophil gelatinase-associated lipocalin 2 (NGAL/LCN2)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma
Osteoactivin	Human	MSD	Serum, Plasma, Urine
Retinol Binding Protein (RBP)	Rat	ELISA	Serum, Urine
Retinol Binding Protein 4 (RBP4)	Mouse, Human	MSD	Serum, Plasma, Urine
Serpin A1	Human	MSD	Plasma
Tissue Inhibitor of MetalloProteinases-1 (TIMP-1)	Cyno, Rat, Human	MSD	Serum, Plasma
Vascular Endothelial Growth Factor-A (VEGF-A)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Hormones			
Adiponectin	Mouse, Rat, Human	MSD	Serum, Plasma
Alpha-Amylase	Cyno, Human	MSD	Serum, Plasma
Corticosterone	Rat	ELISA	Serum
Cortisol	Dog	ELISA	Serum
C-peptide	Rat	ELISA	Serum
C-peptide	Mouse, Rat, Human	MSD	Serum, Plasma
Erythropoietin (EPO)	Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Estradiol (E2)	Cyno	ELISA	serum
Follicle stimulating hormone (FSH)	Human	MSD	Serum, Plasma



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Growth hormone (GH)	Rat, Dog, Human	ELISA	Serum
Growth hormone (GH)	Human	MSD	Serum, Plasma
Glucagon-like peptide-1 (GLP-1)	Cyno, Dog, Mouse, Rat, Human	MSD	Plasma, cell culture supernatants
Insulin	Rat, Dog	ELISA	Serum
Insulin	Mouse, Rat, Human	MSD	Serum, Plasma
Insulin-like growth factor 1 (IGF-1)	Rat, Dog, Cyno, Human	ELISA	Serum
Insulin-like growth factor 1 (IGF-1)	Human	MSD	Serum, Plasma
Glucagon-like peptide-1 (GLP-1)	Cyno, Dog, Mouse, Rat, Human	MSD	Plasma, cell culture supernatants
Intact Parathyroid hormone (iPTH)	Rat, Cyno	ELISA	Serum, Plasma
Luteinizing Hormone (LH)	Human	MSD	Serum, Plasma
Oxytocin	Rat	ELISA	Serum
Prolactin	Rat, Dog	ELISA	Serum
Prolactin	Human	MSD	Serum, Plasma
Thyroid-stimulating hormone (TSH)	Rat, Dog	ELISA	Serum
Thyroxine (T4)	Rat, Dog	ELISA	Serum
Triiodothyronine (T3)	Rat, Dog	ELISA	Serum
Immuno-Oncology			
Angiopoietin-1 (Ang-1)	Human	MSD	Serum, Plasma, Urine
APRIL/TNFSF13	Human	MSD	Serum
Basic Fibroblast Growth Factor (FGF basic)	Human	MSD	Serum, Plasma, Urine
B-Cell Activating Factor (BAFF)	Mouse, Human	MSD	Serum, Plasma
B-Cell Activating Factor Receptor (BAFF-R)	Human	MSD	Serum, Plasma, Urine
B-Cell Maturation Antigen (BCMA)	Human	MSD	Serum
Cancer Antigen 15-3 (CA15-3)	Human	MSD	Serum, Plasma, Urine
Cancer Antigen 125 (CA125)	Human	MSD	Serum, Plasma, Urine
CA50	Human	MSD	Serum, Plasma, Urine, Cerebrospinal Fluid (CSF)
Carcinoembryonic antigen (CEA)	Human	MSD	Plasma
CD5	Human	MSD	Plasma
CD5L	Human	MSD	Serum, Plasma, Urine
CD14	Mouse	MSD	Serum, Plasma
CD20	Human	MSD	Plasma



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
CD27	Human	MSD	Plasma
CD28	Human	MSD	Serum, Plasma
CD40/TNFRSF5	Mouse, Human	MSD	Serum, Plasma
CD40L (soluble)	Human	MSD	Serum, Plasma
CD80/B7-1	Human	MSD	Serum, Plasma
CD276/B7-H3	Human	MSD	Serum, Plasma
CK Beta 8-1/CCL23	Human	MSD	Serum, Plasma
CTLA-4	Human	MSD	Serum, Plasma, cell Lysate
Cytokeratin-8	Human	MSD	Serum, Plasma, Urine
Dipeptidyl Dipeptidase 4 (DPPIV)	Human	MSD	Plasma
E-Cadherin	Human	MSD	Serum, Plasma, Urine
Endoglin	Human	MSD	Serum, Plasma, Urine
Galectin-3	Human	MSD	Serum, Plasma
Glycoprotein 130 Soluble (gp130 soluble)	Human	MSD	Serum
Glucocorticoid-Induced TNFR-Related protein (GITR)	Human	MSD	Serum, Plasma, cell Lysate
LAG3	Human	MSD	Serum, Plasma, cell Lysate
Ligand for Glucocorticoid-Induced TNFR-Related protein (GITR)	Human	MSD	Serum, Plasma, cell Lysate
LIGHT/TNFSF14	Human	MSD	Serum, Plasma
Granzyme A	Human	MSD	Serum, Plasma, cell Lysate
Granzyme B	Mouse, Human	MSD	Serum, Plasma, cell Lysate
ICOS	Human	MSD	Serum, Plasma
ICOS-L/B7-H2	Human	MSD	Serum, Plasma
Lymphocyte-Activation Gene 3 (LAG-3)	Human	MSD	Serum, Plasma, cell Lysate
Matrix Metalloproteinase 3 Total (MMP-3 Total)	Mouse, Human	MSD	Serum, Plasma, Urine
Matrix metalloproteinase 7 (MMP-7)	Human	MSD	Serum, Plasma, Urine
Matrix Metalloproteinase 9 Total (MMP-9 Total)	Mouse, Human	MSD	Serum, Plasma
Mesothelin	Human	MSD	Serum, Plasma, Urine
Nectin-4	Human	MSD	Serum, Plasma, Urine
OX40	Human	MSD	Serum, Plasma, cell Lysate
OX40L	Human	MSD	Serum, Plasma, cell Lysate
Peroxiredoxin-6 (PRDX-6)	Human	MSD	Plasma
Programmed cell death 1 (PD1)	Human	MSD	Serum, Plasma, cell Lysate
Programmed cell death ligand 1 (PD-L1)	Human	MSD	Serum, Plasma, cell Lysate
Programmed cell death ligand 2 (PD-L2)	Human	MSD	Serum, Plasma, cell Lysate
ProMatrix Metallo Proteinase 9	Human	MSD	Serum, Plasma



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
(proMMP-9)			
Receptor of Advanced Glycation End-products (RAGE soluble)	Human	MSD	Plasma
S100A8/MRP8	Human	MSD	Serum, Plasma, Urine
S100 Calcium Binding Protein A12 (S100A12)	Human	MSD	Serum, Plasma
Serine protease inhibitor Kazal-type 1 (SPINK-1)	Human	MSD	Serum, Plasma
Soluble transferrin receptor-1 (sTfR-1)	Human	MSD	Plasma
TACI/TNFRSF13	Human	MSD	Serum, Plasma
Tissue Inhibitor of MetalloProteinases-1 (TIMP-1)	Rat, Human	MSD	Serum, Plasma
TNFAIP6/TSG-6	Human	MSD	Serum, Plasma
Toll-like receptor 1 (TLR1)	Human	MSD	Serum, Plasma, cell Lysate
Transforming Growth Factor beta 1 (TGF-β1)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Trefoil Factor 3 (TFF3)	Human	MSD	Plasma
Triggering receptor expressed on myeloid cells 1 (TREM-1)	Mouse, Rat	MSD	Serum, Plasma
Tumor Necrosis Factor-Receptor 1 (TNF-RI)	Mouse, Human	MSD	Serum, Plasma, Urine
Tumor Necrosis Factor-Receptor 2 (TNF-RII)	Mouse, Rat, Human	MSD	Serum, Plasma
Urokinase Plasminogen Activator Receptor (U-PAR)	Human	MSD	Plasma
41BB/TNFRSF9	Human	MSD	Serum, Plasma
Kidney Injury			
Albumin	Rat, Mouse	ELISA	Serum, BALF, Urine
Albumin	Rat, Human	MSD	Serum, Plasma, Urine
Alpha-2-Macroglobulin (A2M)	Rat	ELISA	Serum
Alpha-2-Macroglobulin (A2M)	Rat, Human	MSD	Serum, Plasma, Urine
Clusterin	Rat	ELISA	Serum, Urine
Clusterin	Mouse, Rat, Human	MSD	Plasma, Urine
Cystatin C	Rat	ELISA	Serum, Urine
Cystatin C	Mouse, Rat, Human	MSD	Serum, Plasma, Urine
Beta 2 Microglobulin (B2M)	Rat	ELISA	Serum, Urine
Beta 2 Microglobulin (B2M)	Rat, Human	MSD	Serum, Plasma, Urine
EGFR (ErbB1)	Human	MSD	Serum, Urine, Whole Cell Lysate
Kidney injury marker 1 (KIM-1/HAVCR1/TIM-1)	Rat, Human	MSD	Serum, Plasma, Urine



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Kidney injury marker 1 (KIM-1)	Rat	ELISA	Serum, Urine
Neutrophil gelatinase-associated lipocalin (NGAL)	Rat	ELISA	Serum, Urine
Neutrophil gelatinase-associated lipocalin 2 (NGAL/LCN2)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma
Osteopontin (OPN)	Rat, Human	MSD	Plasma, Urine
Uromodulin	Human	MSD	Serum, Plasma, Urine
Liver Injury			
Albumin	Rat, Mouse	ELISA	Serum, BALF, Urine
Albumin	Human	MSD	Serum, Plasma, Urine
Human Alkaline Phosphatase (ALP)	Human	MSD	Serum, Plasma
Alpha-2-Macroglobulin (A2M)	Rat, Human	MSD	Serum, Plasma, Urine
Arginase-1/ Alpha Glutathione S-Transferase (α GST)	Rat	MSD	Serum, Plasma
Galectin-3	Human	MSD	Serum, Plasma
Interferon gamma (IFN- γ)	Rat, Human	MSD	Serum, Plasma, Urine
Total protein	Mouse	Colorimetric	BALF
Metabolic			
Adiponectin	Mouse, Rat, Human	MSD	Serum, Plasma
Alpha-Amylase 1	Human	MSD	Serum, Plasma
Alpha-Amylase 2A	Cyno	MSD	Serum, Plasma
Apolipoprotein A1 (ApoA1)	Human	MSD	Plasma
Apolipoprotein C-III (ApoC3)	Human	MSD	Serum, Plasma, Urine
Apolipoprotein E (ApoE)	Human	MSD	Serum, Plasma
B-Cell Activating Factor (BAFF)	Mouse, Human	MSD	Serum, Plasma
Brain-Derived Neurotrophic Factor (BDNF)	Mouse, Rat, Human	MSD	Serum, Plasma, Cell culture media
Beta Nerve Growth Factor (β -NGF)	Human	MSD	Serum, Plasma
Calbindin	Human	MSD	Serum, Plasma, Urine
C-peptide	Rat	ELISA	Serum
C-peptide	Mouse, Rat, Human	MSD	Serum, Plasma
Carbonic Anhydrase 1 (CA1)	Human	MSD	Plasma
Complement Factor D	Human	MSD	Plasma
CCL3 (MIP1- α)	Mouse	CBA	Serum, BALF
CCL3 (MIP1- α)	Rat	ELISA	Serum
CCL3 (MIP1- α)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
CCL15 (MIP-5)	Human	MSD	Serum, Plasma, cell culture



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
CCL24 (EOTAXIN-2)	Cyno, Human	MSD	supernatants Serum, Plasma, cell culture supernatants
CCL27 (CTACK)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture media
CXCL1/ GRO- α	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL5 (ENA-78)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
CXCL12 (SDF-1 α)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
CX3CL1 (Fractalkine)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Eotaxin (CCL11)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Eotaxin-3 (CCL26)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Erythropoietin (EPO)	Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Fibroblast growth factor 21 (FGF-21)	Mouse, Rat, Human	MSD	Serum, Plasma
Fibroblast growth factor 23 (FGF-23)	Human	MSD	Serum, Plasma
FMS-like tyrosine kinase ligand 1 (FLT3L)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Follicle stimulating hormone (FSH)	Human	MSD	Serum, Plasma
Gastric Inhibitory Polypeptide Active (GIP Active)	Human	MSD	Serum, Plasma
Gastric Inhibitory Polypeptide Inactive (GIP Inactive)	Human	MSD	Serum, Plasma
Gastric Inhibitory Polypeptide Total (GIP Total)	Human	MSD	Serum, Plasma
Glycoprotein 130 Soluble (gp130 soluble)	Human	MSD	Serum
Glial Fibrillary Acidic Protein (GFAP)	Human	MSD	Plasma
Glucagon	Mouse, Rat, Human	MSD	Serum, Plasma, cell culture media
Glucagon-like peptide-1 Active (GLP-1 Active)	Cyno, Dog, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Glucagon-like peptide-1 Inactive (GLP-1 Inactive)	Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
Glucagon-like peptide-1 Total (GLP-1 Total)	Cyno, Dog, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Ghrelin (Active)	Mouse, Rat, Human	MSD	Serum, Plasma
Ghrelin (Total)	Human	MSD	Serum, Plasma, cell culture Media
Granulocyte colony-stimulating factor (G-CSF)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF)	Rat, Cyno	CBA	Serum, BALF
Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma, cell culture supernatants
I-309	Human	MSD	Serum, Plasma
IGFBP-4	Human	MSD	Serum
Interferon alpha (IFN- α 2a)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interferon beta (IFN- β)	Cyno	CBA	Serum
Interferon beta (IFN- β)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interferon gamma (IFN- γ)	Dog	ELISA	Serum
Interferon gamma (IFN- γ)	Cyno, Rat, Mouse	CBA	Serum, BALF
Interferon gamma (IFN- γ)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 alpha (IL-1 α)	Rat	CBA	BALF
Interleukin 1 alpha (IL-1 α)	Cyno, Rat, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 beta (IL-1 β)	Mouse, Cyno	CBA	Serum
Interleukin 1 beta (IL-1 β)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 1 receptor antagonist (IL-1RA)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 2 (IL-2)	Cyno, Rat	CBA	Serum
Interleukin 2 (IL-2)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 2 receptor alpha (IL-2R α)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 3 (IL-3)	Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 4 (IL-4)	Cyno	CBA	Serum
Interleukin 4 (IL-4)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 5 (IL-5)	Cyno, Rat	CBA	Serum
Interleukin 5 (IL-5)	Dog	ELISA	Serum
Interleukin 5 (IL-5)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 6 (IL-6)	Cyno, Mouse, Rat	CBA	Serum, BALF
Interleukin 6 (IL-6)	Rat, Dog, Cyno,	ELISA	Serum, BALF



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
	Mouse		
Interleukin 6 (IL-6)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 7 (IL-7)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 8 (IL-8)	Dog, Cyno	ELISA	Serum, BALF
Interleukin 8 (IL-8)	Cyno	CBA	Serum
Interleukin 8 (IL-8)	Dog, Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 9 (IL-9)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 10 (IL-10)	Cyno, Rat	CBA	Serum, BALF
Interleukin 10 (IL-10)	Dog	ELISA	Serum
Interleukin 10 (IL-10)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 p40 (IL-12p40)	Cyno	CBA	Serum
Interleukin 12 and Interleukin 23 p40 (IL-12/IL-23p40)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 12 p70 (IL-12p70)	Rat	CBA	Serum, BALF
Interleukin 12 p70 (IL-12p70)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 13 (IL-13)	Cyno, Mouse	CBA	Serum
Interleukin 13 (IL-13)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 15 (IL-15)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 16 (IL-16)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 17 A (IL-17A)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Interleukin 17 A/F (IL-17A/F)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 C (IL-17C)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 D (IL-17C)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 E and Interleukin 25 (IL-17E/IL-25)	Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 17 F (IL-17C)	Cyno, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Interleukin 18 (IL-18)	Cyno	ELISA	Serum
Interleukin 18 (IL-18)	Rat	CBA	Serum, BALF
Interleukin 18 (IL-18)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Insulin	Mouse, Rat, Human	MSD	Serum, Plasma



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Insulin-like growth factor 1 (IGF-1)	Rat, Dog, Cyno, Human	ELISA	Serum
Insulin-like growth factor 1 (IGF-1)	Human	MSD	Serum, Plasma
Insulin Receptor Substrate 1 (IRS-1)	Human	MSD	Whole Cell Lysate
IP-10 (CXCL10)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Leptin	Mouse, Rat, Human	MSD	Serum, Plasma
Macrophage colony-stimulating factor (M-CSF)	Human	MSD	Serum, Plasma, cell culture supernatants
Macrophage-derived chemokine (MDC)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Macrophage migration inhibitory factor (MIF)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Monocyte Chemoattractant Protein 1 (MCP-1/CCL2)	Cyno, Mouse, Rat, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Monocyte Chemoattractant Protein 2 (MCP-2/CCL8)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Monocyte Chemoattractant Protein 4 (MCP-4/CCL13)	Cyno, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Neuropeptide Y (NPY)	Human	MSD	Serum, Plasma
Oxyntomodulin/Glicentin (OXM/Glicentin)	Human	MSD	Plasma
Peptide-YY Active (PPY Active)	Human	MSD	Serum, Plasma
Peptide-YY Total (PPY Total)	Mouse, Rat, Human	MSD	Serum, Plasma
Proinsulin	Human	MSD	Serum, Plasma
Prolactin	Rat, Dog	ELISA	Serum
Prolactin	Human	MSD	Serum, Plasma
Resistin	Mouse, Rat, Human	MSD	Serum, Plasma
Retinol Binding Protein 4 (RBP4)	Mouse, Human	MSD	Serum, Plasma, Urine
Serpin A1	Human	MSD	Plasma
Serpin A12/Vaspin	Human	MSD	Plasma
TARC (CCL17)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Thyroid-stimulating hormone (TSH)	Rat, Dog	ELISA	Serum
Thyroxine (T4)	Rat, Dog	ELISA	Serum
Triiodothyronine (T3)	Rat, Dog	ELISA	Serum
Tumor Necrosis Factor alpha (TNF- α)	Cyno, Dog, Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants
Tumor Necrosis Factor beta (TNF- β)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Thrombopoietin (TPO)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
TNF-related apoptosis-inducing ligand (TRAIL)	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
TSLP	Human	MSD	Serum, Plasma, cell culture supernatants
Vascular Endothelial Growth Factor-A (VEGF-A)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma
Vit D Binding Protein	Human	MSD	Serum, Plasma
YKL-40	Cyno, Human	MSD	Serum, Plasma, cell culture supernatants
Neurobiology/Neurodegenerative			
Alpha-2-Macroglobulin (A2M)	Rat, Human	MSD	Serum, Plasma, Urine
Alpha Synuclein (α -Synuclein)	Human	MSD	Serum, Plasma, Cerebrospinal Fluid (CSF), Saliva
Amyloid Precursor Protein (APP)	Human	MSD	Tissue culture supernatants, Cerebrospinal Fluid (CSF), Tissue homogenates
Beta-Amyloid Total ($A\beta$ Total)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 38 ($A\beta$ 38)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 38 4G8 ($A\beta$ 38 4G8)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 38 6E10 ($A\beta$ 38 6E10)	Human	MSD	Cerebrospinal Fluid (CSF)
Beta-Amyloid 40 ($A\beta$ 40)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 40 4G8 ($A\beta$ 40 4G8)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 40 6E10 ($A\beta$ 40 6E10)	Human	MSD	Cerebrospinal Fluid (CSF)
Beta-Amyloid 42 ($A\beta$ 42)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 42 4G8 ($A\beta$ 42 4G8)	Rat, Mouse, Human	MSD	Serum, Plasma, cell culture supernatants, Cerebrospinal Fluid (CSF)
Beta-Amyloid 42 6E10 ($A\beta$ 42 6E10)	Human	MSD	Cerebrospinal Fluid (CSF)



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
6E10)			
Beta Nerve Growth Factor (β -NGF)	Human	MSD	Serum, Plasma
Brain-Derived Neurotrophic Factor (BDNF)	Mouse, Rat, Human	MSD	Serum, Plasma, Cell culture media
Calbindin	Human	MSD	Serum, Plasma, Urine
Cathepsin-D	Human	MSD	Plasma
Cystatin C	Mouse, Rat, Human	MSD	Serum, Plasma, Urine
Creatine kinase brain type (CKBB)	Human	MSD	Serum, Plasma
DJ-1/PARK7	Human	MSD	Serum, Plasma, Cerebrospinal Fluid (CSF)
Enolase-2	Human	MSD	Serum, Plasma, Cerebrospinal Fluid (CSF)
Interleukin 2 (IL-2)	Rat	MSD	Serum, Plasma
Leucine Rich Repeat Kinase 2 (LRRK2)	Human	MSD	PBMC Lysate
Leucine Rich Repeat Kinase 2 (LRRK2 pS935)	Human	MSD	PBMC Lysate
Neural Cell Adhesion Molecule 1 (NCAM-1)	Human	MSD	Serum, Plasma
Neurofilament H	Human	MSD	Cerebrospinal Fluid (CSF)
Neurofilament L	Human	MSD	Serum, Plasma
Neuropeptide Y (NPY)	Human	MSD	Serum, Plasma
Peroxiredoxin 6 (PRDX6)	Human	MSD	Plasma
Prolactin	Human	MSD	Serum, Plasma
TARC (CCL17)	Cyno, Mouse, Human	MSD	Serum, Plasma, Urine, cell culture supernatants
Tau (Total)	Mouse, Rat, Human	MSD	Tissue culture supernatants, Cerebrospinal Fluid (CSF)
Vascular Endothelial Growth Factor-A (VEGF-A)	Cyno, Rat, Mouse, Human	MSD	Serum, Plasma
Visinin-like Protein 1 (VILIP-1)	Human	MSD	Plasma
Intracellular/Signaling Pathways			
Aiolos	Human	MSD	Whole Cell Lysate
Akt (PKB)	Cyno, Mouse, Rat, Human	MSD	Cell/Tissue Lysate
BAD	Cyno, Human	MSD	Whole Cell Lysate
Bcl-2	Human	MSD	Whole Cell Lysate
BIM/Bcl2-L-11	Human	MSD	Whole Cell Lysate
Caspase-3	Human	MSD	Whole Cell Lysate
cAMP	Mouse, Rat, Human	MSD	Whole Cell Lysate
C-Jun	Mouse, Rat,	MSD	Whole Cell Lysate



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
CHOP	Human Mouse, Rat,	MSD	Whole Cell Lysate
Cytokeratin-8	Human	MSD	Serum, Plasma, Urine
COMP/TSP-5	Human	MSD	Serum, Plasma
EGFR (ErbB1)	Human	MSD	Serum, Urine, Whole Cell Lysate
ErbB2	Human	MSD	Whole Cell Lysate
ERK-1/2	Mouse, Rat, Human	MSD	Whole Cell Lysate
FasL	Human	MSD	Serum, Plasma, Urine
FOXO3A	Mouse, Rat, Human	MSD	Whole Cell Lysate
FRS2	Mouse, Human	MSD	Whole Cell Lysate
GAPDH	Cyno, Human	MSD	Whole Cell Lysate
Gelsolin	Human	MSD	Plasma
Growth Differentiation Factor-15 (GDF-15)	Human	MSD	Plasma
GSK-3 α	Human	MSD	Whole cell lysate
GSK-3 β	Mouse, Rat, Human	MSD	Whole Cell Lysate
HIF-1 α	Mouse, Rat, Human	MSD	Whole Cell Lysate
Histone H3	Mouse, Rat, Human	MSD	Whole Cell Lysate
HSP70	Human	MSD	Plasma, Whole cell lysate
Ikaros	Human	MSD	Whole cell lysate
Insulin Receptor Substrate 1 (IRS-1)	Human	MSD	Whole Cell Lysate
JNK	Mouse, Rat, Human	MSD	Whole Cell Lysate
Mcl-1/BAK complex	Human	MSD	Whole cell lysate
Mcl-1/Bcl2-L-3	Human	MSD	Whole cell lysate
Mcl-1/BIM Complex	Human	MSD	Whole cell lysate
MEK 1/2	Mouse, Rat, Human	MSD	Whole Cell Lysate
MEK 1/2, MEK2	Mouse, Rat, Human	MSD	Whole Cell Lysate
Phospho/Total Met	Human	MSD	Whole cell lysate
Platelet-derived Growth Factor Receptor (PDGFR- β)	Human	MSD	Whole cell lysate
Phosphorylated NF κ B	Mouse, Rat, Human	MSD	Whole Cell Lysate
Phospho p38	Mouse, Rat, Human	MSD	Whole Cell Lysate



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Phospho p53	Mouse, Rat, Human	MSD	Whole Cell Lysate
Phospho p62 (SQSTM1)	Mouse, Rat, Human	MSD	Whole Cell Lysate
Phospho/Total BAD	Cyno, Human	MSD	Whole Cell Lysate
Phospho-eIF4E	Human	MSD	Whole Cell Lysate
p70S6K Total	Mouse, Rat, Human	MSD	Whole Cell Lysate
PARP	Human	MSD	Whole cell lysate
P-Cadherin	Human	MSD	Serum, Plasma, Urine
Protein kinase-like endoplasmic reticulum kinase (PERK)	Mouse, Rat, Human	MSD	Whole Cell Lysate
Phospho-PRAS40	Mouse, Rat, Human	MSD	Whole Cell Lysate
PSD-95	Mouse, Rat, Human	MSD	Whole Cell Lysate
Retinol Binding Protein 4 (RBP4)	Mouse, Human	MSD	Serum, Plasma, Urine
Stem Cell growth Factor (SCF)	Human	MSD	Serum, Plasma, Urine
Stem Cell growth Factor Receptor (SCFR)	Human	MSD	Serum, Plasma, Whole Cell Lysate
STAT3	Mouse, Rat, Human	MSD	Whole Cell Lysate
pSTAT3 in T cells, B cells and Monocytes	Human	Flow cytometry	PBMC
STAT4	Mouse, Rat, Human	MSD	Whole Cell Lysate
STAT5a/b	Mouse, Rat, Human	MSD	Whole Cell Lysate
S6RP	Mouse, Rat, Human	MSD	Whole Cell Lysate
pSTAT5 in T cells	Cyno, Human	Flow cytometry	PBMC, Whole Blood
Phospho-4E-BP1 (Thr37/46)	Mouse, Human	MSD	Whole Cell Lysate
Tau (Total)	Mouse, Human	MSD	Tissue culture supernatants, Cerebrospinal Fluid (CSF)
Tyrosine kinase 2 (Tie-2)	Human	MSD	Serum, Plasma, Urine, cell culture supernatants, Cell Lysate
TNFRSF10C	Human	MSD	Serum, Plasma
VASP	Human	MSD	Whole Cell Lysate
Vascular Endothelial Growth Factor Receptor 2 (VEGFR-2/KDR)	Human	MSD	Whole Cell Lysate
Wnt3a	Mouse, Rat, Human	MSD	Whole Cell Lysate
XBP-1	Mouse, Rat, Human	MSD	Whole Cell Lysate



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Other Biomarkers			
Calprotectin	Human	MSD	Plasma
E-Selectin	Human	MSD	Serum, Plasma, Urine
Fas Soluble (sFas)	Human	MSD	Serum, Plasma, Urine
Acidic Fibroblast Growth Factor (FGF acidic)	Human	MSD	Serum, Plasma
Fibroblast Activation Protein- α (FAP- α /SEPR)	Human	MSD	Plasma
Histamine	Minipig	ELISA	Serum
Lactotransferrin	Human	MSD	Serum, Plasma
Mast cell tryptase (MCT)	Cyno	ELISA	Serum
Neopterin	Cyno	ELISA	Serum
Pentraxin 2 (PTX2) / Serum amyloid P component (SAP)	Mouse	ELISA	Serum, Plasma
Pentraxin 3 (PTX3)	Human	MSD	Serum, Plasma
Periostin/OSF-2	Human	MSD	Serum, Plasma
Perforin	Human	MSD	Serum, Plasma
P-Cadherin	Human	MSD	Serum, Plasma, Urine
Peroxiredoxin-1 (PRDX-1)	Human	MSD	Plasma
Pulmonary surfactant-associated protein D (PSP-D)	Human	MSD	Serum, Plasma
Sex Hormone-Binding Globulin (SHBG)	Human	MSD	Serum
Total protein	Mouse	Colorimetric	BALF
Functional assays			
NK cell assay	Rat	Flow cytometry	Spleen
Proteasome activity	Cyno	Enzymatic	Whole blood
pSTAT3 in T cells, B cells and Monocytes	Human	Flow cytometry	PBMC
pSTAT5 in T cells	Cyno, Human	Flow cytometry	PBMC, Whole Blood
Immunophenotyping			
Absolute lymphocyte counts (T/B/NK panels)	Rat, Cyno	Flow cytometry	Whole blood
Absolute lymphocyte counts (T-c memory/naïve)	Cyno	Flow cytometry	Whole blood
Monocyte counts (classical/activated)	Cyno	Flow cytometry	Whole blood
Activated T lymphocytes immunophenotyping	Cyno	Flow cytometry	Activated PBMC
Dendritic cells phenotyping (mDC and pDC)	Cyno	Flow cytometry	PBMC



List of Biomarkers available in ITR

<u>Biomarker</u>	<u>Species</u>	<u>Platform</u>	<u>Matrix</u>
Regulatory T cells (with intracellular Foxp3)	Cyno	Flow cytometry	Whole blood, PBMC
<u>Various surface and intracellular markers to combine:</u>			
- Surface :			
CD3, CD4, CD8, CD11c, CD14, CD16, CD19, CD20, CD21, CD25, CD28, CD38, CD43, CD44, CD45, CD45RA, CD62L, CD69, CD95, CD115, CD122, CD127, CD137, CD138, CD159a (NKG2A), CD161B/C, CD197 (CCR7), CD278 (ICOS) CD314 (NKG2D), HLA-DR, TCR $\gamma\delta$, MHC-II	Cyno, Human, Mouse, Rat, Pig **	Flow cytometry	Whole blood, Splenocytes, Lymph nodes
- Intracellular :			
FoxP3, Granzyme B, Helios, IL-4, IL-6, IL10, IFN- γ , Ki67, Perforin, TGF- β , TNF	Cyno, Human, Mouse, Rat **	Flow cytometry	Whole blood, Splenocytes, Lymph nodes
- Other: Viability, Apoptosis, Proliferation Migration	Various species	Flow cytometry, Microplate (fluorescence)	Various cell types

Legend:

CBA: (Flow) Cytometry Bead Array.

** The listed markers may not apply to all the species.

MSD: Meso Scale Discovery.