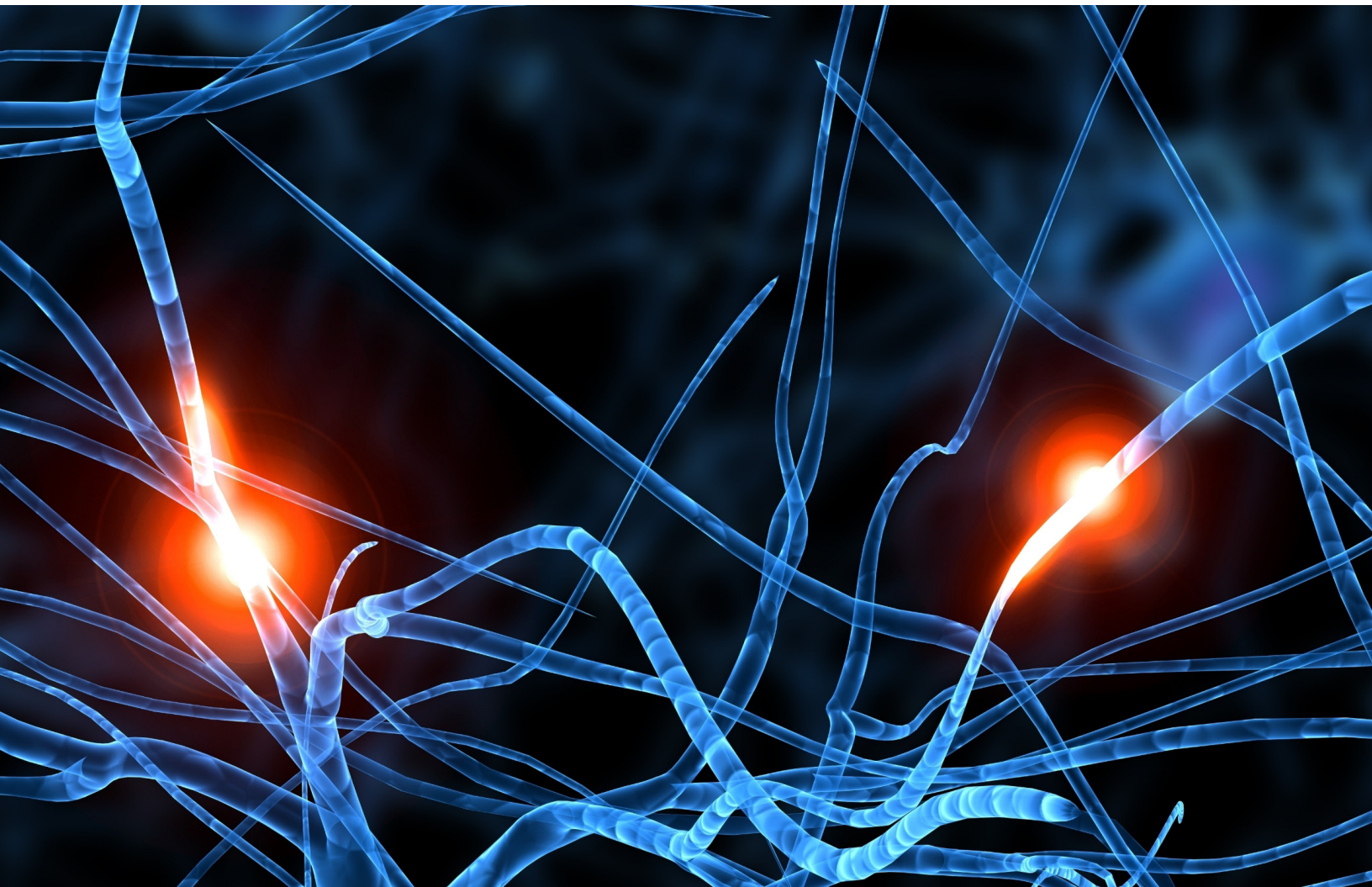


Multiplex assays for biomarkers research & clinical application



The Multiplex Technology

The study of a unique biomarker does not generate sufficient contributions to advance in the clinical research of any disease, for which there is a lack of knowledge. Multiplex Luminex® assays enable the simultaneous analysis of multiple proteins in single samples from a broad range of biological sources. Neuron Bio provides the quantitative determination of the widest selection of biomarkers available on the market for studies in humans (serum, plasma, tissue/cell extracts, or culture media samples).

Multiplex Technology offer many advantages compared with other analytical methods:



Speed/High Throughput

A large number of different analytes (more than 40) can be analyzed simultaneously in a unique sample.



Precision

A precise quantification of antigen-antibody interaction is generated.



Reproducibility

Allows assay standardization; other similar techniques do not.



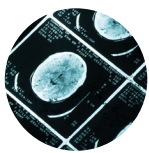
Less sample volume needed

With a minimum time of work, 40 analytes can be studied with only 25µL of a unique sample volume.

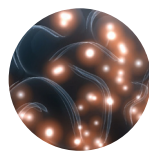
Multiplexed biomarkers detection may accelerate research in different areas, being e.g. the study of cancer and neurodegenerative diseases fields with a high need of design and evaluation of new diagnosis methods.

This technology enables the multiplexing of many types of bioassays, reducing time, labor and costs over traditional methods. The bioassays requires only 25µL of neat plasma or serum, or 25µL cell culture supernatant per well.

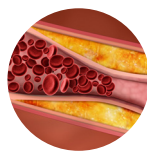
Neuron Bio offers the determination of multitude of biomarkers in important areas such as:



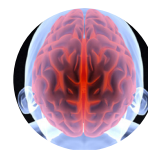
Oncology



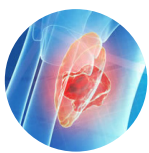
Immunology



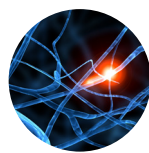
Cardiology



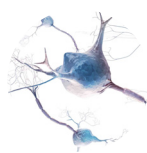
Neuroscience



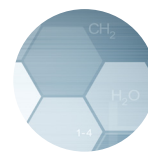
Metabolism & endocrinology



Cellular Signaling



Intracellular

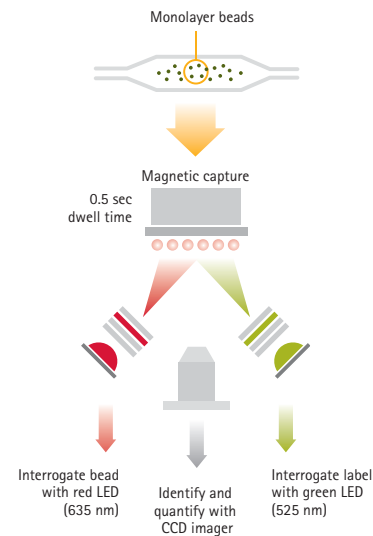


Toxicology

The Luminex® xMAP® Technology

MILLIPLEX® MAP is based on the Luminex xMAP® bead-based assay platform which is capable of performing bioassays, including immunoassays, on the surface of fluorescent-coded magnetic (MagPlex®) bead microspheres.

- 1 Luminex® uses proprietary techniques to internally color-code microspheres with multiple fluorescent dyes.
- 2 After the target protein from a test sample is captured by the bead, a biotinylated detection antibody is introduced.
- 3 The reaction mixture is then incubated with a reporter molecule, to complete the reaction on the surface of each microsphere.



Neuron Bio provides the MAGPIX® analyzer that integrates key xMAP® capture and detection components with the speed and efficiency of magnetic bead processing.

Neuron Bio performs the entire biomarker determination from sample collection to submission of the report with the results of your study.



“Neuron Bio contributes to understanding and comprehension of numerous diseases by using the Multiplex technology through the study of specific biomarkers.”

Juan M. Alfaro, Neuron Bio's Commercial Manager.

Cancer Biomarkers

Human Circulating Cancer Biomarker

Panel 1

α -Fetoprotein (AFP)
CA125
CA15-3
CA19-9
CEA
CYFRA21-1
sFas
sFasL/TNFRSF6
FGF-2/FGF-basic
HCG β
HE4
HGF
IL-6
IL-8/CXCL8
Leptin
MIF
Osteopontin (OPN)
Prolactin
PSA (free)[†]
PSA (total)[†]
SCF
TGF α
TNF α
TRAIL/TNFSF10
VEGF-A

Panel 2

Antithrombin III
Complement Factor H (CFH)
Extracellular Matrix Protein 1 (ECM1)
Vitamin D Binding Protein
Vitronectin

Panel 3

Cathepsin D
Ferritin
Fibroblast activation protein (FAP)
Galectin 3
IGFBP3
Melanoma inhibitory activity (MIA)
Myeloperoxidase (MPO)
Sex hormone binding globulin (SHBG)

Panel 4

New!

ALDH1A1
Carbonic Anhydrase 9 (CA9)
CD44
EpCAM
Hepsin
Kallikrein-6
Mesothelin
Midkine
NCAM1/L1CAM/CD171
Transglutaminase 2 (TGM2)

Human Cancer / Metastasis Biomarker

Panel 1

DKK1
GDF15
Neuron-specific enolase (NSE)
Osteonectin (SPARC)
Osteoprotegerin (OPG)

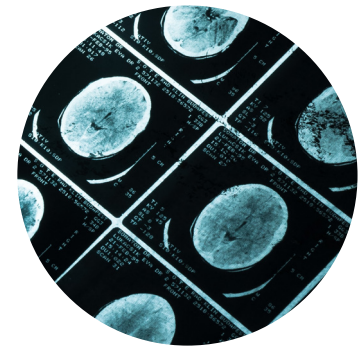
Human Angiogenesis / Growth Factor

Panel 1

Angiopoietin-2
BMP-9
EGF
Endoglin
Endothelin-1
FGF-1/FGF-acidic
FGF-2/FGF-basic
Follistatin (FST)
G-CSF
HB-EGF
HGF
IL-8/CXCL8
Leptin
Placental GrowthFactor (PLGF)
VEGF-A
VEGF-C
VEGF-D

Panel 2

Angiostatin/Kringle
sAXL
sc-Kit/sStem Cell Factor Receptor (SCFR)
sE-Selectin
sEGFR/sHER1/sErbB1
sHER2/sEGFR2/sErbB2
sHER3/sEGFR3/sErbB3
sHGFR/sc-Met
sIL-6R α
sNeuropilin-1 (sNRP-1)
Osteopontin (OPN)
PDGF-AB/BB
sPECAM-1
Tenascin C (TN-C)
Thrombospondin-2 (TSP-2)
sTIE-2
suPAR
sVEGFR1/sFlt1
sVEGFR2/sKDR/sFlk-1
sVEGFR3/sFlt-4



Studies of isolated biomarkers are often inappropriate to distinguish between an abnormal cell growth and a normal process. The multiplex detection of biomarkers for both intracellular and circulating and also angiogenesis, may accelerate the studies of normal homeostasis processes with respect to tumoral processes.

~ 100
Biomarkers

Using **multiplex technology**, there are almost **100 biomarkers** available for processes of cancer and angiogenesis.

Immunology / Immune Response Biomarkers

Human Cytokine / Chemokine

Panel 1	Panel 2	Panel 3	Panel 4	New!
sCD40L EGF Eotaxin/CCL11 FGF-2/FGF-basic Flt3 Ligand Fractalkine /CX3CL1 G-CSF GM-CSF GRO IFN α 2 IFN γ IL-1 α IL-1 β IL-1Ra IL-2 IL-3 IL-4 IL-5 IL-6 IL-7 IL-8/CXCL8 IL-9 IL-10 IL-12 (p40) IL-12 (p70) IL-13 IL-15 IL-17A/CTLA8 IP-10/CXCL10 MCP-1/CCL2 MCP-3/CCL7 MDC/CCL22 MIP-1 α /CCL3 MIP-1 β /CCL4 PDGF-AA PDGF-AB/BB RANTES/CCL5 TGF α TNF α TNF β / Lymphotoxina (LTA) VEGF-A	6Ckine/CCL21/ Exodus-2 BCA-1/CXCL13 CTACK/CCL27 ENA-78/CXCL5 Eotaxin-2/CCL24/ MPIF-2 Eotaxin-3/CCL26 IL-16 IL-20 IL-21 IL-23 IL-28A/IFN λ 2 IL-33/NF-HEV (mature) I-309/CCL1 LIF MCP-2/CCL8 MCP-4/CCL13 MIP-1 δ /MIP-5/ CCL15 SCF SDF-1/CXCL12 TARC/CCL17 TPO TRAIL/TNFSF10 TSLP	HCC-1/CCL14 IL-11 IL-29/IFN λ 1 I-TAC/CXCL11 LIX/CXCL6/GCP-2 Lymphotoxin/XCL1 M-CSF MIG/CXCL9 MIP-3 α /CCL20 MIP-3 β /CCL19 NAP-2/CXCL7	APRIL/TNFSF13 IL-14/ α -Taxilin BAFF/Blys BRAK/CXCL14 CXCL16 CCL28 HCC-4/CCL16 HMGB1 MPIF/CCL23 IFN β MIP-4/PARC/CCL18 IL-19 IL-24 IL-28B/IFN λ 3 IL-32 α IL-34 IL-35 IL-36/IL-1F8 IL-37/IL-1F7 IL-38/IL-1F10 YKL40/1CHI3L1	

Human High Sensitivity T Cell

Panel 1
Fractalkine/CX3CL1 GM-CSF IFN γ IL-1 β IL-2 IL-4 IL-5 IL-6 IL-7 IL-8/CXCL8 IL-10 IL-12 (p70) IL-13 IL-17A/CTLA8 IL-21 IL-23 I-TAC/CXCL11 MIP-1 α /CCL3 MIP-1 β /CCL4 MIP-3 α /CCL20 TNF α

Human Soluble Cytokine Receptor

Panel 1
sCD30 sEGFR sgp130 sIL-1RI sIL-1RII sIL-2Ra sIL-4R sIL-6R sRAGE sTNF RI sTNF RII sVEGFR1/sFlt-1 sVEGFR2/sKDR/ sFlk-1 sVEGFR3/sFlt-4

Immunology / Immune Response Biomarkers, continued

Human Th17

Panel 1

GM-CSF
IFN γ
IL-1 β
IL-2
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-21
IL-22
IL-23
IL-27
IL-28A/IFN λ 2
IL-31
IL-33/NF-HEV (mature)
MIP-3 α /CCL20
TNF α
TN β / Lymphotoxina (LTA)

Human CD8+ T Cell

Panel 1

sCD137/4-1BB/TNFRSF9
sFas
sFasL/TNFRSF6
GM-CSF
Granzyme A
Granzyme B
IFN γ
IL-2
IL-4
IL-5
IL-6
IL-10
IL-13
MIP-1 α /CCL3
MIP-1 β /CCL4
Perforin
TNF α

Human Complement

Panel 1

Adipsin/Factor D
C2
C4b
C5
C5a
C9
Factor I
Mannose-binding lectin (MBL)

Panel 2 New!

C1q
C3
C3b
C4
Factor B
Factor H
Properdin

Human Immunoglobulin Isotyping

Panel 1

IgA
IgG1
IgG2
IgG3
IgG4
IgM

Human MMP

Panel 1

MMP-3
MMP-12
MMP-13

Panel 2

MMP-1
MMP-2
MMP-7
MMP-9
MMP-10

Human IgE - Single Plex

Panel 1

IgE

Human TIMP

Panel 1

TIMP-1
TIMP-2

Panel 2

TIMP-1
TIMP-2
TIMP-3
TIMP-4

Human Skin

Panel 1

Cortisol
Fibronectin
Human Serum
Albumin (HSA)
Involucrin
Keratin-1,10
Keratin-6
LPS

Immunology / Immune Response Biomarkers, continued

Human Sepsis

Panel 1

sFas
sFasL/TNFRSF6
sICAM-1
MIF
PAI-1 (total)
sVCAM-1

Panel 2

Granzyme B
HSP70
IL-1 α
IL-8/CXCL8
MIP-1 α /CCL3
MIP-1 β /CCL4
MMP-8

Panel 3

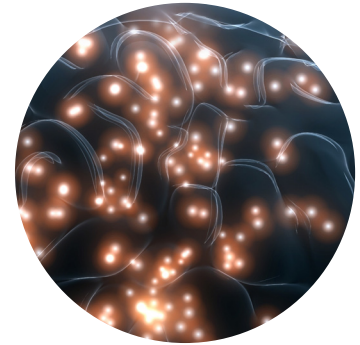
Lactotransferrin (LTF)
NGAL/Lipocalin-2
Neutrophil Elastase-2 (ELA2)
Resistin
Thrombospondin-1 (TSP-1)

Panel 4

FGF-13
MMP-8
Olfactomedin-4 (OLFM-4)

Panel 5

Elastase-2
Proteinase-3 (PRTN-3)



T cells, B cells and myeloid cells act in recognition, activation and in the effecting phase of the immune response by the production of cytokines. Thus, quantification of cytokines is a very significant process to understand diseases such as autoimmune diseases, cardiovascular diseases, metabolic syndrome, neurological disorders and cancer.

~250
Biomarkers

Using multiple technologies, the available panel of cytokines/chemokines allows detecting simultaneously circa 250 analytes of different species.

Cardiovascular Biomarkers

Human CVD Panel 1

Panel 1

BNP
NT proBNP
CK-MB
LIX/CXCL6/GCP-2
CXCL16
Endocan (ESM-1)
FABP3
FABP4
LIGHT
Oncostatin (OSM)
Placental Growth
Factor (PLGF)
Troponin I (TnI)

Panel 2

ADAMTS13
GDF-15
D-dimer
sICAM-1
NGAL/Lipocalin-2
Myeloperoxidase
(MPO)
Myoglobin
Serum Amyloid A
sP-Selectin
sVCAM-1

Panel 3

α -2-Macroglobulin
Adipsin/Factor D
 α 1-Acid
Glycoprotein (AGP)
CRP
Fetuin A
Fibrinogen
Haptoglobin
sL-Selectin
Platelet Factor 4 (PF4)
Serum Amyloid P
von Willebrand Factor (vWF)

Panel 4

sE-Selectin
Follistatin (FST)
dPAPP-A
sCD31/sPECAM-1
Pentraxin-3 (PTX3)
Tissue Factor (TF)
Thrombomodulin
Troponin T (TnT)

Human Apolipoproteins

Panel 1

Apo AI
Apo AII
Apo B
Apo CII
Apo CIII
Apo E



Cardiovascular problems are the main global cause of mortality leading to 30% of all deaths in a one year period (according to WHO). It is necessary to analyze data of multiple analytes from various systems in order to obtain a complete picture of this disease.

~ 50
Biomarkers

Neuron Bio has **over 50 biomarkers** in this area.

Neuroscience

Human Neurodegenerative Disease

Panel 1

α -2-Macroglobulin
Apo AI
Apo CIII
Apo E
Complement C3
Factor H
Prealbumin/Transthyretin (TTR)

Panel 2

α -2-Antitrypsin (A1AT)
C4
CRP
MIP-4/PARC/CCL18
PEDF
Serum Amyloid P (SAP)

Panel 3

BDNF
Cathepsin D
sICAM-1
Myeloperoxidase (MPO)
sNCAM
PAI-1 (total)
PDGF-AA
PDGF-AB/BB
RANTES/CCL5
sVCAM-1

Panel 4

A β 1-40
A β 1-42
GDNF
sRAGE
S100B

Human Neurological Disorders

Panel 1

α -Synuclein
Glial Fibrillary Acidic Protein (GFAP)
Neuron-Specific Enolase (NSE)
PARK5/UCHL1
PARK7/DJ1
Transglutaminase 2 (TGM2)

Panel 2

α -1-Acid
Glycoprotein (AGP)
Ceruloplasmin (CP)
Haptoglobin (HP)
Serum Amyloid P

Panel 3

Angiotensinogen (AGT)
Contactin-1
Fetuin A
Kallikrein-6
Osteopontin (OPN)
Soluble Superoxide Dismutase 1 (sSOD1)
Soluble Superoxide Dismutase 2 (sSOD2)

Human Amyloid Beta and Tau

Panel 1

New!

A β 1-40
A β 1-42
Tau (Thr181)
Tau (total)

Human Neuropeptide

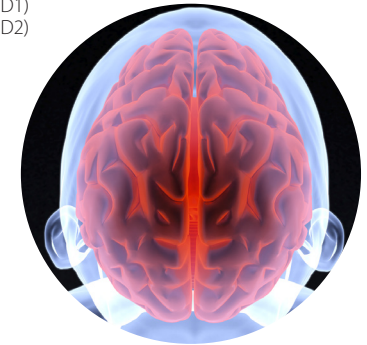
Panel 1

I α -MSH
 β -Endorphin
Neurotensin
Orexin A
Oxytocin
Substance P

Human Circadian Stress

Panel 1

Cortisol
Melatonin



No single biomarker has the power to give a complete picture of the nervous system functions such as the perception, the knowledge, and the motor and homeostatic control as well as diseases such as Alzheimer's, Parkinson, Multiple Sclerosis and Amyotrophic Lateral Sclerosis.

~ 60
Biomarkers

Available biomarkers of this technology allow a multivariable analysis of the underlying processes in the neuronal development, homeostasis and pathogenesis, thus preserving such valuable samples.

Metabolism /Endocrinology

Human Adipokine

Panel 1

Adiponectin
Adipsin/Factor D
NGAL/Lipocalin-2
PAI-1 (total)
Resistin

Panel 2

HGF
IL-1 β
IL-6
IL-8/CXCL8
Insulin
Leptin
MCP-1/CCL2
NGF
TNF α

Human Adipocyte

Panel 1

Adiponectin
HGF
IL-1 β
IL-6
IL-8/CXCL8
Leptin
MCP-1/CCL2
NGF
PAI-1 (total)
Resistin
TNF α

Human Diabetes

Panel 1

New!

C-Peptide
GLP-1 (active)
Glucagon
Insulin
Leptin

Panel 1

Amylin (active)
Amylin (total)
C-Peptide
Ghrelin (active) %
GIP (total)
GLP-1 (active)
GLP-1 (total)
Glucagon
IL-6
Insulin
Leptin
MCP-1/CCL2
Pancreatic Polypeptide (PP)
PYY (total)
TNF α

Human Metabolic Hormone

Human Myokine

Panel 1

New!

Apelin
BDNF
Fractalkine /CX3CL1
Erythropoietin
(EPO)
LIF
IL-15
SPARC/Osteonectin
Myostatin
FABP3
Irisin
FSTL-1
IL-6
Osteocrin/Musclin
Oncostatin-M

Human Liver Protein

Panel 1

α -Fetoprotein (AFP)
ANGPTL3
ANGPTL4
ANGPTL6
FABP1
FGF-19
FGF-21
FGF-23
HGF

Human IGF Binding Protein

Panel 1

IGFBP1
IGFBP2
IGFBP3
IGFBP4
IGFBP5
IGFBP6
IGFBP7

Human IGF

Panel 1

IGF-1
IGF-2

Metabolism /Endocrinology, continued

Human Pituitary

Panel 1

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

Panel 2

BDNF
Prolactin

Bone Metabolism

Human Bone

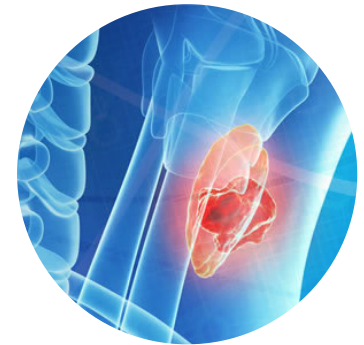
Panel 1

ACTH
DKK1
FGF-23
IL-1 β
IL-6
Insulin
Leptin
Osteocalcin (OC)
Osteopontin (OPN)
Osteoprotegerin (OPG)
PTH
Sclerostin (SOST)
TNF α

Human RANKL

Panel 1

RANKL



Obesity, diabetes and conditions related to metabolic syndrome concern public health.

~100
Biomarkers

With the multiplex technology, Neuron Bio has accessible a panel of **over 100** metabolism and endocrinology biomarkers.

Cell Signaling

Akt1 Phospho/Total

Panel 1

Akt1 Phosphorylated (Ser473)
Akt1 Total

Akt2 Phospho/Total

Panel 1

Akt2 Phosphorylated (Ser473)
Akt2 Total

Akt3 Phospho/Total

Panel 1

Akt3 Phosphorylated (Ser473)
Akt3 Total

Akt Phospho/Total

Panel 1

Akt/PKB Phosphorylated (Ser473)
Akt/PKB Total

CREB Phospho/Total

Panel 1

CREB 3 Phosphorylated (Ser133)
CREB 3 Total

Erk/MAPK 1/2 Phospho/Total

Panel 1

Erk/MAPK 1/2 Phosphorylated (Thr185/Tyr187)
Erk/MAPK 1/2 Total

IRS1 Phospho/Total

Panel 1

IRS1 Phosphorylated (Ser636)
IRS1 Total

JNK Phospho/Total

Panel 1

JNK/SAPK1 Phosphorylated (Thr183/Tyr185)
JNK/SAPK1 Total

mTOR Phospho/Total

Panel 1

mTOR Phosphorylated (Ser2448)
mTOR Total

p38 Phospho/Total

Panel 1

p38/SAPK2A/B Phosphorylated (Thr180/Tyr182)
p38/SAPK2A/B Total

STAT3 Phospho/Total

Panel 1

STAT3 Phosphorylated (Tyr705)
STAT3 Total

Akt/mTOR

Panel 1

Phosphoprotein

Akt/PKB Phosphorylated (Ser473)
GSK3a Phosphorylated (Ser21)
GSK3b Phosphorylated (Ser9)
IGF1R Phosphorylated (Tyr1135/1136)
IR Phosphorylated (Tyr1162/1163)
IRS1 Phosphorylated (Ser636)
mTOR Phosphorylated (Ser2448)
p70S6 Kinase Phosphorylated (Thr389/412)
PTEN Phosphorylated (Ser380)
RPS6 Phosphorylated (Ser235/236)
TSC2 Phosphorylated (Ser939)

Panel 2

Total

Akt/PKB Total
GSK3a Total
GSK3b Total
IGF1R Total
IR Total
IRS1 Total
mTOR Total
p70S6 Total
PTEN Total
RPS6 Total
TSC2 Total

Early Apoptosis

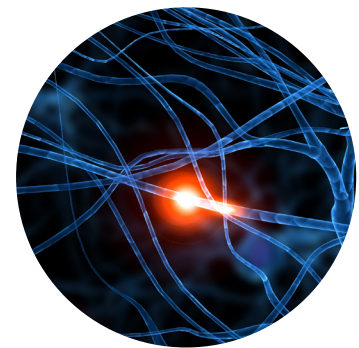
Panel 1

Akt/PKB Phosphorylated (Ser473)
BAD Phosphorylated (Ser112)
Bcl-2 Phosphorylated (Ser70)
Active Caspase 8 Total
Active Caspase 9 Total
JNK/SAPK1 Phosphorylated (Thr183/Tyr185)
p53 Phosphorylated (Ser46)

Human Late Apoptosis

Panel 1

Active Caspase Total
Cleaved PARP Total
GAPDH Total



Cellular signaling is often called as the translation of signals and allows cells receiving, communicating and answering their environment. Errors in cellular signaling are responsible for important diseases such as diabetes, cancer, autoimmunity, neurological disorders and cancer.

~160
Biomarkers

Thanks to multiplex panels of cellular signaling it is possible to detect **up to 160** different analytes

Cell Signaling, continued

MAPK/SAPK (Phosphoprotein)

Panel 1

ATF2 Phosphorylated (Thr71)
Erk/MAPK 1/2 Phosphorylated (Thr185/Tyr187)
HSP27 Phosphorylated (Ser78)
JNK/SAPK1 Phosphorylated (Thr183/Tyr185)
c-Jun Phosphorylated (Ser73)
MEK1 Phosphorylated (Ser222)
MSK1 Phosphorylated (Ser212)
p38/SAPK2A/B Phosphorylated (Thr180/Tyr182)
p53 3 (Ser15)
STAT1 3 (Tyr701)

Human Mitogenesis RTK

Panel 1 Phosphoprotein

c-Met/HGFR Phosphorylated (pan Tyr)
EGFR Phosphorylated (pan Tyr)
ErbB2/HER2 Phosphorylated (pan Tyr)
ErbB3 Phosphorylated (pan Tyr)
ErbB4 Phosphorylated (pan Tyr)
IGF1R Phosphorylated (pan Tyr)
IR Phosphorylated (pan Tyr)

Multi-Pathway

Panel 1 Phosphoprotein

Akt/PKB Phosphorylated (Ser473)
CREB Phosphorylated (Ser133)
Erk/MAPK 1/2 Phosphorylated (Thr185/Tyr187)
NFkB Phosphorylated (Ser536)
JNK/SAPK1 Phosphorylated (Thr183/Tyr185)
p38/SAPK2A/B Phosphorylated (Thr180/Tyr182)
p70S6 Kinase Phosphorylated (Thr389/412)
STAT3 Phosphorylated (Ser727)
STAT5A/B Phosphorylated (Tyr694/699)

Src Family Kinase Active Site

Panel 1

Blk Phosphorylated (Tyr389)
Fgr Phosphorylated (Tyr412)
Fyn Phosphorylated (Tyr420)
Hck Phosphorylated (Tyr411)
Lck Phosphorylated (Tyr394)
Lyn Phosphorylated (Tyr397)
Src Phosphorylated (Tyr419)
Yes Phosphorylated (Tyr421)

T-Cell Receptor

Panel 1

CD3e Phosphorylated (pan Tyr)
CREB Phosphorylated (Ser133)
Erk/MAPK 1/2 Phosphorylated (Thr185/Tyr187)
LAT Phosphorylated (pan Tyr)
Lck Phosphorylated (pan Tyr)
Syk Phosphorylated (pan Tyr)
ZAP-70 Phosphorylated (pan Tyr)

NFkB

Panel 1

c-Myc Total
FADD Phosphorylated (Ser194)
Ikb α Phosphorylated (Ser32)
IKK α /b Phosphorylated (Ser177/Ser181)
NFkB Phosphorylated (Ser536)
TNFR1 Total

Human Mitogenesis RTK

Panel 1 Total

c-Met/HGFR Total
EGFR Total
ErbB2/HER2 Total
ErbB3 Total
ErbB4 Total
IGF1R Total
IR Total

Multi-Pathway

Panel 1 Total

Akt/PKB
CREB
Erk/MAPK 1/2
NFkB
JNK/SAPK1
p38/SAPK2A/B
p70S6 Kinase
STAT3
STAT5A/B

STAT

Panel 1

STAT1 Phosphorylated (Tyr701)
STAT2 Phosphorylated (Tyr690)
STAT3 Phosphorylated (Tyr705)
STAT5A/B Phosphorylated (Tyr694/699)
STAT6 Phosphorylated (Tyr641)

TGF β

Panel 1

Akt/PKB Phosphorylated (Ser473)
Erk/MAPK 1/2 Phosphorylated (Thr185/Tyr187)
SMAD2 Phosphorylated (Ser465/467)
SMAD3 Phosphorylated (Ser423/425)
SMAD4 Total
TGF β RII Total

Cell Signaling, continued

Human DNA Damage/Genotoxicity

Panel 1

ATR Total
Chk1 Phosphorylated (Ser345)
Chk2 Phosphorylated (Thr68)
H2A.X Phosphorylated (Ser139)
MDM2 Total
p21 Total
p53 Phosphorylated (Ser15)

Human RTK

Panel 1

c-Kit Phosphorylated (pan Tyr)
c-Met/HGFR Phosphorylated (pan Tyr)
EGFR Phosphorylated (pan Tyr)
ErbB2/HER2 Phosphorylated (pan Tyr)
ErbB3/HER3 Phosphorylated (pan Tyr)
ErbB4/HER4 Phosphorylated (pan Tyr)
FGFR1 Phosphorylated (pan Tyr)
Flt3 Phosphorylated (pan Tyr)
IGF1R Phosphorylated (pan Tyr)
IR Phosphorylated (pan Tyr)
MSCFR Phosphorylated (pan Tyr)
PDGFR α Phosphorylated (pan Tyr)
PDGFR β Phosphorylated (pan Tyr)
TIE1 Phosphorylated (pan Tyr)
TIE2 Phosphorylated (pan Tyr)
VEGFR1/Flt-1 Phosphorylated (pan Tyr)
VEGFR2/KDR/Flk-1 Phosphorylated (pan Tyr)
VEGFR3/Flt-4 Phosphorylated (pan Tyr)

Human Heat Shock Protein

Panel 1

HSP27 Total
HSP27 Phosphorylated (Ser78/Ser82)
HSP60 Total
HSP70 Total
HSP90 α Total

Intracellular

Human Glycolysis Pathway

Panel 1

Enolase 1 (ENO1)
Glucose-6-Phosphate Isomerase (G7PI)
HIF-1 α
Lactate Dehydrogenase A (LDA)
Lactate Dehydrogenase B (LDB)
Pyruvate Kinase Isozyme M2 (PKM2)
Transketolase

Human Oxidative Phosphorylation

Panel 1

Complex I (NADH-Ubiquinone Oxidoreductase)
Complex II (Succinate Ubiquinone Oxidoreductase)
Complex III (Ubiquinone Cytochrome C Oxidoreductase)
Complex IV (Cytochrome C Oxidase)
Complex V (ATP Synthase)
NNT (Nicotinamide Nucleotide Transhydrogenase)

Human Oxidative Stress

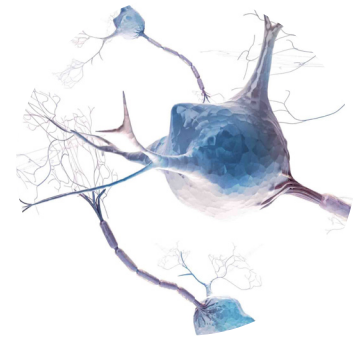
Panel 1

Catalase
Peroxiredoxin 2 (PRX2/PRDX2)
Superoxide dismutase 1 (SOD1)
Superoxide dismutase 2 (SOD2)
Thioredoxin (TRX1)

Pyruvate Dehydrogenase (PDH) Complex

Panel 1

PDH 3 Total
PDH 3 Phosphorylated (Ser232)
PDH 3 Phosphorylated (Ser293)
PDH 3 Phosphorylated (Ser300)



Research may lead the researcher to study circulating biomarkers, as well as intracellular biomarkers and both at the same time.

~ 25
Biomarkers

Intracellular biomarkers available in Neuron Bio offer quicker responses thus using significantly less quantity of sample than Western blot techniques, mass spectrometry or phosphorylation assays.

Toxicity

Human Kidney Injury

Panel 1

Calbindin
Collagen IV
FABP1
GSTα
GSTπ
IP-10/CXCL10
KIM-1
Osteoactivin
Renin
TFF-3
TIMP-1

Panel 2

α-1-Microglobulin
Albumin
Clusterin
Cystatin C
EGF
NGAL/Lipocalin-2
Osteopontin (OPN)

Panel 3

β-2-Microglobulin
RBP4
Uromodulin

Panel 4

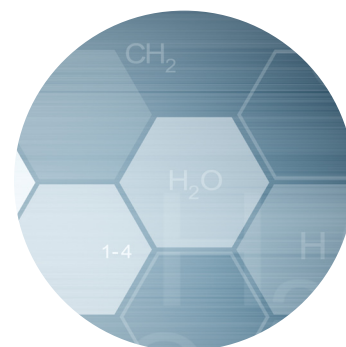
EGF
FABP1
GSTα
IP-10/CXCL10
KIM-1
Osteopontin (OPN)
PTH
Renin

Panel 5

α-1-Microglobulin
Collagen IV
GSTπ
NGAL/Lipocalin-2
Osteoactivin
TIMP-1
Uromodulin

Panel 6

β-2-Microglobulin
Clusterin
Cystatin C
RBP4



Once again, no single biomarker has the power to tell us what we need to know in order to describe the effects of a compound in a study model.

~ 40
Biomarkers

Toxicological biomarkers available in Neuron BioServices have the capability to identify an organic damage before it becomes an extended phenomenon, due their powerful sensitivity.

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