



# Custom Assay Development

*Custom multiplex solutions that advance your clinical research*

## Custom Assay Development

For over 30 years, Randox Biosciences has been providing custom assay design, development and manufacturing services to the diagnostic, pharmaceutical, contract research and biotech industries. This also includes fully customised human and animal quality control sera and calibrators.

Randox Biosciences expertise, highly specialised scientists and world-class ISO accredited manufacturing facilities enables us to provide a service and product tailored to a specific research and development or clinical trial requirement.

## Custom Build Process

Clients can select either individual or multiple analytes from the current A-Z Menu. We offer an impressive menu of over 320 clinical and research biomarkers including 70 toxicology drug assays.

Randox Biosciences dedicated custom unit can then design a novel singleplex or multiplex biochip tailored to each customer's requirements taking into account sample types, available sample volumes and expected ranges for various analytes of interest.

Should your needs exceed those provided by one of our standard arrays, or if you are researching a particular set of analytes, we would encourage you to approach a Randox Biosciences representative with your specific requirements or email [info@randoxbiosciences.com](mailto:info@randoxbiosciences.com).

Randox Biosciences assay development specialists will endeavour to work with you to ensure your needs are constantly met and provide a smooth process from the time of your first enquiry through to final delivery.

### STEP 1

Submission of custom array requirements (completion of Biochip Questionnaire Form)

### STEP 2

Randox custom R&D unit carry out feasibility assessment

### STEP 3

If feasible, a quote will be forwarded to the customer

### STEP 4

Confirmation of order and biochip manufacturing commences

# A-Z Custom Biochip Test Menu

Analyte	Abbrev.	AKA
17-Hydroxyprogesterone ***	PROG	
70 Kilodalton Heat Shock Proteins	HSP70	
A Disintegrin and Metalloproteinase Domain 12	ADAM12	
A Disintegrin And Metalloproteinase with Thrombospondin Motifs 1	ADAMTS-1	
A Proliferation-Inducing Ligand	APRIL	
Activin A		
Adiponectin ***	GBP-28	
Adrenocorticotrophic Hormone	ACTH	
Adrenomedullin	ADM	
Agouti	AgRP	
Albumin	ALB	
Alpha Synuclein	SNCA	
Alpha-1 Antitrypsin	a-1-AT	
Alpha-1 Microglobulin	a-1M	
Alpha-2 Macroglobulin	a-2M	
Amphiregulin		
Amyloid A	SAA	
Angiopoietin I	ANG1	
Angiopoietin II	ANG2	
Angiotensin II		
Anti-Müllerian hormone	AMH	MIF, MIS, MIH
Apelin		
Apolipoprotein A1	APOA1	
Artemin	ARTN	
Atrial Natriuretic Peptide	ANP	
Basal Cell Adhesion Molecule	BCAM	
B-cell Activating Factor	BAFF	BlyS/TNFSF13B
B-cell Attracting chemokine 1	BCA-1	CXCL13/BLC
B-cell Lymphoma Extra Large	BCL-XL	
Bcl-2 Associated X Protein	Bax	
Bone Morphogenetic Protein 6	BMP-6	
Bone Morphogenetic Protein 7	BMP-7	
Brachyury	T	
Brain Natriuretic Peptide	BNP	
Brain-Derived Neurotrophic Factor	BDNF	
Calcitonin	CT	
Carbonic anhydrase III	CaIII	
Cardiac Troponin I ***	cTnI	
Cartilage Oligomeric Matrix Protein	COMP	
Caspase 1	CASP 1	
Caspase 6	CASP 6	
Caspase 9	CASP 9	
Cathepsin C	CTSC	
Chemerin	RARRES2	
Chemokine (C-C motif) Ligand 1	CCL1	I309
Chemokine (C-C motif) Ligand 13	CCL13	MCP4
Chemokine (C-C motif) Ligand 14	CCL14	HCC-1
Chemokine (C-C motif) Ligand 15	CCL15	MIP-5
Chemokine (C-C motif) Ligand 17	CCL17	TARC
Chemokine (C-C motif) Ligand 18	CCL18	PARC
Chemokine (C-C motif) Ligand 19	CCL19	MIP-3b
Chemokine (C-C motif) Ligand 20	CCL20	MIP-3a
Chemokine (C-C motif) Ligand 21	CCL21	Exodus-2
Chemokine (C-C motif) Ligand 22	CCL22	MDC
Chemokine (C-C motif) Ligand 26	CCL26	Eotaxin-3
Chemokine (C-C motif) Ligand 27	CCL27	CTACK

Analyte	Abbrev.	AKA
Chemokine (C-C motif) Ligand 28	CCL28	MEC
Chemokine (C-X-C motif) Ligand 1	CXCL1	GRO1
Chemokine (C-X-C motif) Ligand 4	CXCL4	PF-4
Chemokine (C-X-C motif) Ligand 5	CXCL5	ENA-78
Chemokine (C-X-C motif) Ligand 7	CXCL7	NAP-2
Chemokine (C-X-C motif) Ligand 9	CXCL9	MIG
Chemokine (C-X-C motif) Ligand 11	CXCL11	ITAC
Chemokine (C-X-C motif) Ligand 12	CXCL12	SDF-1
Chemokine (C-X-C motif) Ligand 13	CXCL13	BCA-1
Chemokine (C-X-C motif) Ligand 16	CXCL16	SRPSOX
Chemokine (C-X-C motif) Ligand 17	CXCL17	VCC-1
Chemokine 3 Ligand 1	CX3CL1	Fractalkine
Cleaved Poly ADP Ribose Polymerase	Cleaved-PARP	
Cluster of Differentiation 4	CD4	
Cluster of Differentiation 14	CD14	
Cluster of Differentiation 28	CD28	
Cluster of Differentiation 30	CD30	
Cluster of Differentiation 36 (soluble)	sCD36	
Cluster of Differentiation 56	CD56	
Cluster of Differentiation 66e	CD66e	CEACAM5
Cluster of Differentiation 127	CD127	
Cluster of Differentiation 163	CD163	
Clusterin	CLUS	
Collagen Type 2	CIIM	
Collagen Type 3	C3M	COL3A1
Collagen Type 4	C4	COL4
Complement 3	C3	
Complement 3a	C3a	
Cortisol ***	CORT	Hydrocortisone
C-Peptide ***	CPEP	
C-Reactive Protein ***	CRP	
Creatine Kinase ***	CKMB	
CRPM	CRPM	SH3BP2
Cyfra 21-1		Cyfra 21-1
Cystatin C ***	CST3	
Cytokeratin 18 M-65	CK18	
D-Dimer	DD	
Defensin	NP1	
Defensin 2 beta	BD-2	SAP1
Dehydroepiandrosterone ***	DHEAS	
Dickkopf Related Protein 1	DKK-1	
Elafin	SKALP	
Endothelin-1	EDN1	
Eotaxin	CCL11	
Epidermal Growth Factor	EGF	
Epidermal Growth Factor Receptor	EGFR	
Epigen	EPGN	
Epiregulin		
E-selectin	ESEL	
Estradiol ***	E2	
Factor VII	F7	
Fatty Acid Binding Protein 1	FABP1	
Fatty Acid Binding Protein-Liver	L-FABP	
Fatty-Acid Binding Protein	FABP	
Ferritin ***	FTN	
Ferritin Light Chain	FTL	
Fibrinogen	Fib	

# A-Z Custom Biochip Test Menu

Analyte	Abbrev.	AKA
Fibroblast Growth Factor 4	FGF-4	
Fibroblast Growth Factor 7	FGF-7	
Fibroblast Growth Factor 19	FGF-19	
Fibroblast Growth Factor 21	FGF-21	
Fibroblast Growth Factor 23	FGF-23	
Fibronectin	FN	
FMS-Related Tyrosine Kinase 1	FLT-1	VEGFR1
FMS-Related Tyrosine Kinase 3	FLT-3 Ligand	CD135
Folate Receptor Alpha	FOLR1	
Follicle-Stimulating Hormone ***	FSH	
Follistatin	FST	
Galectin 3	G3	
Glial Fibrillary Acidic Protein	GFAP	
Glutathione S-Transferase A1	GSTA1	
Glycogen Phosphorylase Isoenzyme BB	GPBB	
Granulocyte Colony Stimulating Factor	G-CSF	CSF3
Granulocyte/Macrophage Colony-Stimulating Factor	GM-CSF	
Granzyme B	GZMB	
Growth Differentiation Factor 11	GDF-11	
Growth Differentiation Factor 15	GDF-15	
Growth Differentiation Factor 8/Myostatin	GDF-8	
Heme Oxygenase-1	HO-1	
Hemopexin	HPX	
Heparin-Binding Epidermal Growth Factor	HB-EGF	
Heparin-Binding Protein	HBP	Azurocidin/ CAP37
Hepatocyte Growth Factor	HGF	
Hepcidin	HEPCIDIN	
Heregulin	NRG-1	
High-mobility group protein B1	HMGB1	
Histone Deacetylase 6	HDAC 6	
Human beta Defensin 2	BD-2	
Human epididymis protein 4	HE4	
Human Growth Hormone	HGH	
Hypoxia-Inducible factor 1, alpha subunit	HIF-1a	
Immunoglobulin E	IgE	
Insulin	INS	
Insulin Growth Factor	IGF1	
Insulin Growth Factor 2	IGF2	
Insulin-Like Growth Factor 1	IGF-1	
Insulin-Like Growth Factor 1 Receptor	IGF1R	
Insulin-Like Growth Factor 2 Receptor	IGF2R	
Insulin-Like Growth Factor Binding Protein 2	IGFBP2	
Insulin-Like Growth Factor Binding Protein 3	IGFBP3	
Intercellular Adhesion Molecule 1	ICAM-1	
Interferon alpha	IFN $\alpha$	
Interferon gamma	IFN $\gamma$	
Interferon gamma-induced protein 10	IP-10	
Interleukin 1 alpha	IL-1 $\alpha$	
Interleukin 1 beta	IL-1 $\beta$	
Interleukin 1 Receptor 4	IL-1R4	ST2
Interleukin 1 Receptor alpha	IL-1Ra	
Interleukin 2	IL-2	
Interleukin 3	IL-3	
Interleukin 4	IL-4	

Analyte	Abbrev.	AKA
Interleukin 5	IL-5	
Interleukin 6	IL-6	
Interleukin 7	IL-7	
Interleukin 8	IL-8	
Interleukin 9	IL-9	
Interleukin 10	IL-10	
Interleukin 11	IL-11	
Interleukin 12	IL-12	
Interleukin 12p40	IL-12p40	
Interleukin 12p70	IL-12p70	
Interleukin 13	IL-13	
Interleukin 15	IL-15	
Interleukin 16	IL-16	
Interleukin 17A	IL-17A	
Interleukin 17F	IL-17F	
Interleukin 18	IL-18	
Interleukin 22	IL-22	
Interleukin 23	IL-23	
Interleukin 26	IL-26	
Interleukin 28a	IL-28A	
Interleukin 33	IL-33	
Interleukin 36g	IL-36g	
Kidney Injury Molecule 1	KIM-1	
Kirsten Rat Sarcoma Viral Oncogene	K-RAS	
Leptin	LEPT	
Leukemia Inhibitory Factor	LIF	
Leukotriene B4	LTB4	
LIGHT	TNFSF14	CD258
Lipopolysaccharide Binding Protein	LBP	
Lipoprotein-associated Phospholipase A2	Lp-PLA2	
Liver Fatty Acid Binding Protein	FABP1	LFABP
L-selectin	LSEL	
Luteinizing Hormone	LH	
Lymphotactin	XCL1	
Macrophage Colony Stimulating Factor	M-CSF	CSF-1
Macrophage Inflammatory Protein 1 Alpha	MIP-1 $\alpha$	CCL3
Macrophage Inflammatory Protein 1 beta	MIP-1 $\beta$	CCL4
Macrophage Migration Inhibitory Factor	MIF	
Matrix Metalloproteinase 9	MMP-9	
Matrix Metalloproteinase 1	MMP-1	
Matrix Metalloproteinase 2	MMP-2	
Matrix Metalloproteinase 3	MMP-3	
Matrix Metalloproteinase 7	MMP-7	
Matrix Metalloproteinase 8	MMP-8	
Matrix Metalloproteinase 13	MMP-13	
MHC Class 1 Chain Related Protein A	MICA	
Midkine	MK	
Monocyte Chemotactic Protein 1	MCP-1	CCL2
Monocyte Chemotactic Protein 2	MCP-2	
Monocyte Chemotactic Protein 3	MCP-3	CCL7
Monokine induced by gamma interferon	MIG	
Mucin-1	MUC-1	
Myeloperoxidase	MPO	
Myoglobin	MYO	
Myosin Light-Chain Kinase	MLCK	
Nerve Growth Factor beta	NGF b	

# A-Z Custom Biochip Test Menu

Analyte	Abbrev.	AKA
Neuregulin 1	NRG-1	
Neuron-Specific Enolase	NSE	
Neutrophil Elastase	ELA2	
Neutrophil Gelatinase-Associated Lipocalin	NGAL	
Nitrotyrosine	NT	
N-Terminal pro B-type Natriuretic Peptide	NT-proBNP	
Nuclear Factor 2	NRF2	
Oligoadenylate Synthetase 1	OAS1	
Orexin A	OA	
Osteoactivin		
Osteocalcin	PGLAP	SPP1
Osteopontin	OPN	
Osteoprotegerin	TNFSF11B	
Oxidised Low-Density-Lipoproteins	ox-LDL	TSG-14
Pentraxin-Related Protein	PTX 3	
Pepsinogen 1	PG1	
Periostin	POSTN	
Persephin		
Phosphatidylinositol-Glycan Biosynthesis class F	PIGF	
pi Glutathione S-Transferase	pi-GST	
Placental Growth Factor	PGF	PIGF
Plasminogen Activator Inhibitor-1	PAI-1	Serpin E1
Platelet Derived Growth Factor	PDGF	
Platelet Derived Growth Factor - AA	PDGF-AA	
Platelet Derived Growth Factor Receptor beta	PDGFRB	
Platelet-Derived Endothelial Cell Growth Factor	PD-ECGF	
Platelet-Derived growth factor BB	PDGF-BB	
Pro Insulin	INS	
Prolactin	PRL	
Proprotein Convertase Subtilisin/Kexin type 9	PCSK9	
P-selectin	PSEL	
Regulated and Normal T cell Expressed and Secreted	RANTES	CCL5
Renin	REN	
Resistin	ADSF	
Retinol Binding Protein 4	RBP-4	
S100 Calcium Binding Protein A8	S100A8	
S100A8/A9		
S100A12	EN-RAGE	
Sclerostin	SOST	
Secretory IgA	IgA	
Serotonin	5-HT	
Serum Amyloid A	SAA	
Sex Hormone-Binding Globulin	sHBG	
Soluble CD40 Ligand	sCD40L	
Soluble gp130	sgp130	
Soluble Interleukin 2 Receptor alpha	sIL-2Ra	
Soluble Interleukin 6 Receptor alpha	sIL-6Ra	
Soluble Interleukin 15 Receptor alpha	sIL-15Ra	
Soluble Tumor Necrosis Factor Receptor 1	sTNFR1	
Soluble Tumor Necrosis Factor Receptor 2	sTNFR2	
Stem Cell Factor	SCF	
Stem Cell Factor Receptor	SCFR	

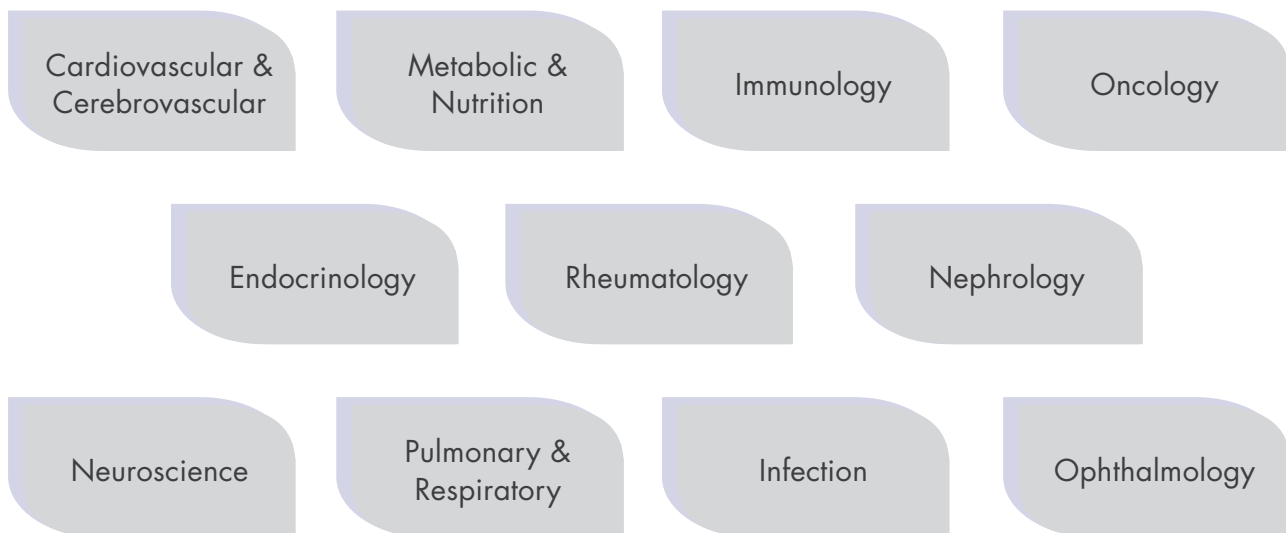
Analyte	Abbrev.	AKA
Stromal Cell-Derived factor-1	SDF-1	
Surfactant Protein A	SP-A	
Surfactant Protein D	SP-D	SFTPD
Testosterone	TEST	
Thrombomodulin	TM	
Thrombopoietin	THPO	
Thrombospondin-1	TSP-1	
Thymic stromal lymphopoietin	TSLP	
Thyroid-Stimulating Hormone	TSH	
Thyroxine	T4	
Tissue Inhibitor of Metalloproteinase 1	TIMP-1	
Tissue Inhibitor of Metalloproteinase 2	TIMP-2	
Tissue Inhibitor of Metalloproteinase 3	TIMP-3	
Tissue Inhibitor of Metalloproteinase 4	TIMP-4	
TNF-related apoptosis-inducing ligand	TRAIL	
Transferrin	TF	
Transforming Growth Factor Alpha	TGF- $\alpha$	
Trefoil Factor 3	TFF3	
Triiodothyronine	T3	
Tumor Necrosis Factor Ligand Superfamily Member 12	TWEAK	TNFSF12
Tumour Necrosis Factor alpha	TNF- $\alpha$	
Tumour Necrosis Factor beta	TNF- $\beta$	
Tumour Necrosis Factor Receptor II	TNFR2	
Type IV Collagen	COL4	
Tyrosine Kinase with Immunoglobulin-Like and EGF-like Domains 1	Tie-1	
Tyrosine Kinase with Immunoglobulin-Like and EGF-like Domains 2	Tie-2	
Ubiquitin Carboxy-Terminal Hydrolase L1	UCHL1	
u-Plasminogen Activator	uPA	
Urokinase Receptor	uPAR	
Uromodulin	UMOD	THP
Uteroglobin	CC16	
Vascular Cell Adhesion Protein 1	VCAM-1	
Vascular Endothelial Growth Factor	VEGF	
Vascular Endothelial Growth Factor A	VEGF $\alpha$	
Vascular Endothelial Growth Factor B	VEGF $\beta$	
Vascular Endothelial Growth Factor C	VEGF $\gamma$	
Vascular Endothelial Growth Factor D	VEGF $\delta$	
Vascular Endothelial Growth Factor Receptor 1	VEGFR1	
Vascular Endothelial Growth Factor Receptor 2	VEGFR2	
Vascular Endothelial Growth Factor Receptor 3	VEGFR3	
Visfatin	PBEF1	
X-linked Inhibitor of Apoptosis Protein	XIAP	
YKL-40/Cartilage Glycoprotein 39	YKL-40	

\*\*\* These assays have clinical implications and require QA approval before an order is accepted.

# Toxicology Test Menu

- (7-NH2) Flunitrazepam
- AB Pinaca
- Acetaminophen
- AK B48
- Amphetamine
- Barbiturates
- Bath Salts (αPVP/MDPV)
- Bath Salts 2 (Methcathinone and Mephedrone)
- Benzodiazepine 1
- Benzodiazepine 2
- Benzylpiperazines
- Buprenorphine
- Cannabinoids
- Carbamazepine
- Chloral Hydrate Metabolite
- Cocaine Metabolite
- Benzoyllecgonine
- Dextromethorphan
- Digoxin
- DOX Series
- EDDP
- Escitalopram
- Ethanol
- Ethyl Glucuronide
- Fentanyl
- Fluoxetine
- Generic Opioids
- Gentamicin
- Haloperidol
- Ibuprofen
- JWH-018 / AM-2201
- JWH-250 / RCS-8
- Ketamine
- Lithium
- LSD
- MDMA
- Meperidine
- Meprobamate
- Mescaline
- Methadone
- Methamphetamine
- Methaqualone
- Methylphenidate
- Mitragynine
- NBoMe
- Nor Buprenorphine
- Nor Fentanyl
- Opiates
- Oxycodone 1
- Oxycodone 2
- Phencyclidine
- Phenobarbital
- Phenylpiperazines 1
- Phenylpiperazines 2
- Phenytoin
- Propoxyphene
- Ritalinic Acid
- Salicylate
- Salvinorin
- Sertraline
- Theophylline
- Tramadol
- Trazodone
- Tricyclic Antidepressants (TCAs Generic)
- UR-144 / XLR-11
- Valproic Acid
- Zaleplon
- Zolpidem
- Zopiclone

Biomarkers are available for a diverse range of therapeutic areas which include but are not limited to:



For additional information about our custom assay development services, please contact [info@randoxbiosciences.com](mailto:info@randoxbiosciences.com)