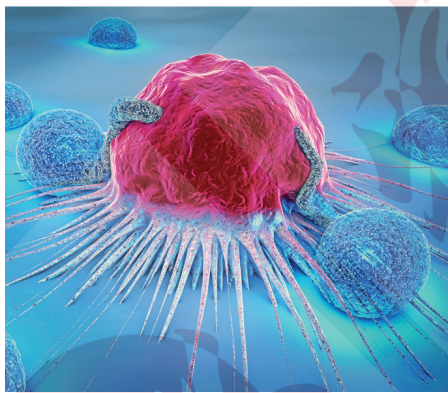
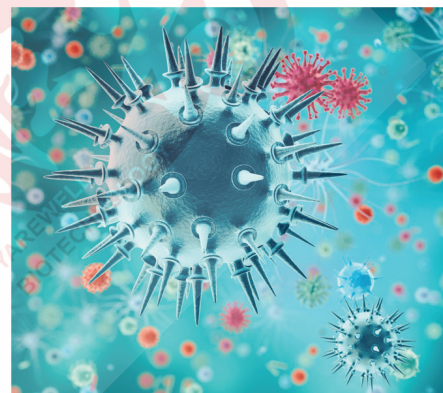
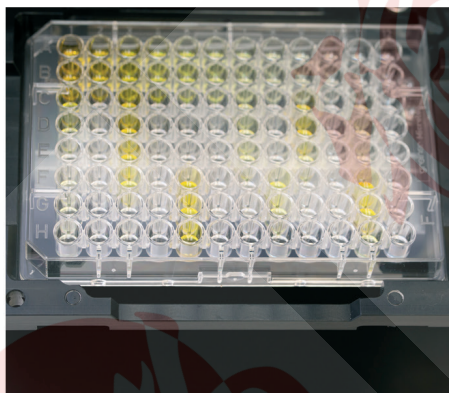
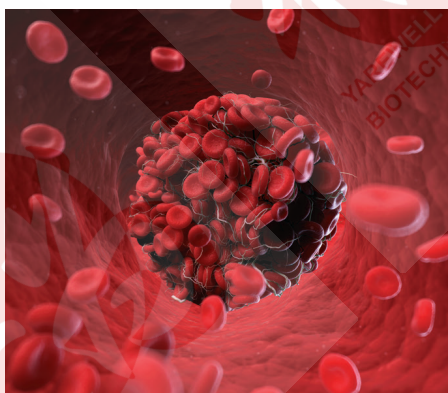


PRODUCTS & SERVICES

HUMAN ANTIGENS
ENZYMES
SERUM & PLASMA
ANTIBODIES
ANTIBODY DEVELOPMENT
NANOPARTICLES

GOLD CONJUGATES
LATERAL FLOW ASSAY
DEVELOPMENT &
MANUFACTURE
SMARTPHONE DIAGNOSTIC
READER



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INTRODUCTION

BBI Solutions is serving the life sciences industry through connected core competencies that include a comprehensive suite of reagents with custom development options, lateral flow development, diagnostic manufacturing services and smartphone reader technologies.

Leveraging our decades of experience in all stages of diagnostic development for the right solutions, the first time.



Browse this brochure for an overview of our reagents and services for IVD development.

HUMAN ANTIGENS

Disease Area	Product Name	Product Code (Pure)	Product Code (Part-pure)
Autoimmune / Inflammation	(α) alpha - 1 - antichymotrypsin (ACT)	P159-5	
	(α) alpha - 1 - antitrypsin (A1AT)	P165-5	
	(β) Beta-2-glycoprotein-1 (B2GP1)	P195-5	
	C-reactive protein (CRP)	P100-7N	
	Procalcitonin (PCT) (recombinant)	P742-1	
	Thyroglobulin (Tg)	P128-0	
	Thyroid peroxidase (TPO)		P187-4A
Cancer / Tumour	Alpha fetoprotein (AFP)	P109-3	
	Beta 2-microglobulin (β2M)	P122-1	P122-2
	CA125		P251-4
	CA15-3		P301-4
	CA19-9		P291-4
	Carcinoembryonic antigen (CEA)	P824-3	
	CYFRA 21-1		P246-4
	Neuron specific enolase (NSE)	P147-3	
	Prostate-specific antigen (PSA)	P117-7	P117-8
	Prostatic Acid Phosphatase	P116-1	
	PSA-ACT complex	P192-3	P192-9
Cardiac	Creatine kinase MM (CK-MM)		P189-9
	D-Dimer	P202-3	P202-4
	Galectin 3 (Gal-3) (recombinant)	P734-1	
	High-density lipoprotein (HDL)		P233-8
	Low-density lipoprotein (LDL)		P232-8
	Myoglobin (MYO)	P136-3	
	N-terminal prohormone brain natriuretic peptide (NT-Pro BNP)	P305-1	
	Troponin complex (cTn)		P184-4
	Troponin I recombinant	P725-3	
	Troponin T recombinant	P724-3	
Hormones	Human chorionic gonadotropin (hCG)	P111-0	P111-6
	Prolactin	P700-1	
	Sex hormone-binding globulin (SHBG)	P145-5	P145-4
Immunoglobulins	IgA	P143-3	
	IgG	P142-1	
	IgM	P141-4	
Nutritional	Albumin (ALB)	P140-0	
	Ferritin	P103-7	
	HbA1c	PS186-9	P186-0B
	Prealbumin (Prealb)	P171-1	P171-2
	Transferrin receptor (TfR)	P185-3A	P185-9
Plasma Proteins	Albumin	P140-0	
	Complement C3c	P150-1	

HUMAN ANTIGENS

Disease Area	Product Name	Product Code (Pure)	Product Code (Part-pure)
Plasma Proteins	Complement C4c	P151-0	P151-8
	Complement C1q	P102-1	
	Thyroxine binding globulin (TBG)	P125-1	P125-2
Renal	Cystatin C (CysC)	P175-1	P175-2
	Lipocalin (NGAL) (recombinant)	P722-1	
	Retinol binding protein (RBP)	P124-1	
	Tamm horsfall glycoprotein (THG)	P135-1	
	α 1-microglobulin (α1M)	P121-1	P121-6

CUSTOM DEVELOPMENT AND MANUFACTURE OF ANTIGENS

Our custom antigen development service, takes recombinant or native antigens from initial feasibility right through to verification. If you can't find the antigens you are looking for, contact us today and we will do our best to provide a custom solution.

The Process



FEASIBILITY

RECOMBINANT

- + Screening of gene databases
- + E coli & Pichia
- + Cloning
- + Transformation
- + Small scale fermentation

NATIVE

- + Sourcing of raw materials of human origin
- + Small scale extraction and purification



OPTIMISATION

RECOMBINANT

- + Optimised growth conditions
- + Formulation
- + Downstream processing
- + Purification
- + Fermentation capacity of 30L per batch

NATIVE

- + Large scale extraction
- + Downstream processing purification



VERIFICATION

NATIVE & RECOMBINANT

- + HPLC
- + Western blot
- + Protein electrophoresis
- + IEF Gels
- + Commercial autoanalysers
- + Stability trials
- + Validation

Discuss your requirements with our technical team on +44 (0) 1495 363 000 or email sales@bbisolutions.com

ENZYMES

Industry	Application	Product Name
Diagnostic Enzymes	Clinical Chemistry	Cholesterol esterase
		Cholesterol oxidase
		Creatinase
		Creatininase
		Glucose-6 phosphate dehydrogenase
		Glucose oxidase
		Glutamate dehydrogenase (GLDH)
		Lactate dehydrogenase (LDH)
		Malate dehydrogenase (MDH)
		Mutarotase
		Peroxidase
		Urease
		Uricase
	Immunoassay	Alkaline phosphatase
		Intrinsic factor
		Peroxidase
	Biosensor	Cholesterol esterase
		Cholesterol oxidase
		Creatinase
		Creatininase
		FAD dependent glucose dehydrogenase
		Glucose oxidase
		Urease
		Uricase
		Urine Test Strips
	Peroxidase	
	Porcine Liver Esterase	
	Ribonuclease	
	Bulk Enzymes	Chymotrypsin
		Chymotrypsinogen
		Deoxyribonuclease
		Hyaluronidase
		Mucopolysaccharidase
Peroxidase		
Ribonuclease		
Trypsin		
Miscellaneous Applications		Catalase
	D-amino acid oxidase	
	Hyaluronidase	
	Lipoxidase	
	Pepsin	
	Superoxide dismutase	
	Trypsin inhibitor	

CUSTOM DEVELOPMENT
AND MANUFACTURE OF ENZYMES

If BBI Solutions' off-the-shelf products do not meet your requirements, we offer a custom development and manufacturing service for enzymes.

BBI's Capabilities

- + **Specialists in sourcing and extraction of animal and plant products** – we have extensive experience in sourcing raw materials worldwide
- + **Salt/solvent fractionation** – batch sizes of up to 5,000 litres
- + **Chromatography** – ion exchange chromatography, affinity chromatography, size exclusion chromatography, hydrophobic interaction chromatography
- + **Crystallisation** – highly effective protein purification using solvent and aqueous media
- + **Ultrafiltration** – volumes of 2,500 – 30,000 litres
- + **Freeze drying** – capacity of 48 – 420 litres per cycle
- + **Quality control** – in-process analysis & monitoring, development of assay/test procedures
- + **Product handling/sampling** – we offer special packing according to customer specifications

The Process



FEASIBILITY

- + Small scale purification
- + Critical process parameters gained



DEVELOPMENT

- + Process optimisation
- + Intermediate scale-up



VERIFICATION

- + Routine protein analyses
 - Enzyme assays
 - Protein determinations
 - Analytical chromatography
 - SDS page
 - Isoelectric focusing
- + Develop protocols to ensure optimised yields



VALIDATION

- + Established manufacturing/testing processes
- + Consistent conformance to product specification

Discuss your requirements with our technical team on
+44 (0) 1495 363 000 or email sales@bbisolutions.com

MONOCLONAL ANTIBODIES

Disease Area	Product Name	Product Code	Application	Capture / Detector
Anemia	Ferritin	BM210-P3A8	ELISA	Detector
	Ferritin	MAB290P	ELISA	Capture / Detector (self-pairing)
Autoimmune / Inflammation	Lactoferrin	MAB232P	ELISA	Capture / Detector
	Lactoferrin	MAB233P	ELISA	Capture / Detector
	CRP (Recombinant Fab)	BR228-D4A3	ELISA / Luminex	Detector
Bone Metabolism	Osteopontin	MAB222P	ELISA	Capture / Detector
	Osteopontin, C-terminal	MAB197P	ELISA / WB	
	Osteopontin, N-terminal	MAB193P	ELISA / WB	Capture / Detector
	Osteopontin, N-terminal	MAB194P	ELISA / WB	
	Osteopontin, N-terminal	MAB195P	ELISA / WB	
	Osteopontin, N-terminal	MAB196P	ELISA / WB	
	Parathyroid hormone	BM361-E4H3	ELISA	Detector
Cancer / Tumour	CA15-3	BM236-K6A5	ELISA / WB	Detector
	CA15-3	BM236-V2G9	ELISA / WB	Capture
	CA19-9	BM238-G6C8	ELISA / WB	Capture
	Free PSA	MAB296P	ELISA	Capture
	Osteopontin	MAB222P	ELISA	Capture / Detector
	Osteopontin, C-terminal	MAB197P	ELISA / WB	
	Osteopontin, N-terminal	MAB193P	ELISA / WB	Capture / Detector
	Osteopontin, N-terminal	MAB194P	ELISA / WB	
	Osteopontin, N-terminal	MAB195P	ELISA / WB	
	Osteopontin, N-terminal	MAB196P	ELISA / WB	
	PSA	MAB291P	ELISA	Capture / Detector
	PSA	MAB292P	ELISA	Capture / Detector
	S100 Beta (Recombinant Fab)	BR332-F5H7	ELISA	
	Cardiac	D-Dimer	MAB284P	ELISA
D-Dimer		MAB285P	ELISA	Capture
D-Dimer clone 1D2		BM243-1D2	ELISA / LF / WB	ELISA = Detector, LF = Capture
D-Dimer clone 3B6		BM243-3B6	ELISA / LF / WB	ELISA = Capture, LF = Detector
Galectin 3		BM451-K7H2	ELISA / WB	Detector
Galectin 3		BM451-N8E8	ELISA / WB	Capture
Galectin 3		BM451-V7G5	ELISA / WB	Detector
Myeloperoxidase		MAB208P	ELISA	Capture
Myeloperoxidase		MAB209P	ELISA	Detector
ST2 (Recombinant Fab)		BR139-S7B7	ELISA / Luminex	Capture
ST2 (Recombinant Fab)		BR139-T3G5	ELISA / Luminex	Capture
ST2 (Recombinant Fab)		BR139-V8D4	ELISA / Luminex	Detector
Troponin I		BM322-M4E5	ELISA / LF / WB	Detector
Troponin I		MAB283P	ELISA	Detector

Disease Area	Product Name	Product Code	Application	Capture / Detector
Control/Tags	Glutathione S-Transferase (GST)	MAB241P	WB	
	His-tag	MAB230P	ELISA / WB	
	Maltose Binding Protein (MBP)	MAB231P	ELISA / WB	
	Polyethylene glycol (PEG)	MAB206P	ELISA	
	Polyethylene glycol (PEG) Rat	MAB207P	ELISA / WB	
Diabetes	HbA1c	BM300-F7C2	ELISA / LF / WB	Detector
	HbA1c	BM300-H2B1	ELISA / LF / WB	Detector
	Haemoglobin	BM302-S6B9	ELISA / LF / WB	Capture
	Haemoglobin	BM302-F1B4	ELISA / LF	Capture
Fertility	AMH	BM459-P2B4	CLIA / ELISA / LF	Capture
	AMH	BM459-S4E8	CLIA / ELISA / LF	Detector
	beta HCG	MAB107P	ELISA	
	Free beta HCG	BM317-T7H6	ELISA	Capture
	Free beta HCG	BM317-S8D2	ELISA	Detector
	Human Chorionic Gonadotropin-Beta (hCG-Beta)	MAB106P	ELISA / WB	
	Human Chorionic Gonadotropin-Intact (hCG)	MAB105P	ELISA / WB	
Growth Factors	IGFBP3	BM396-P6F9	ELISA	Capture
	IGFBP3	BM396-V3C7	ELISA	Detector
Hormones	beta HCG	MAB107P	ELISA	
	Cortisol	MAB215P	ELISA	
	Free beta HCG	BM317-S8D2	ELISA	Detector
	Free beta HCG	BM317-T7H6	ELISA	Capture
	Human Chorionic Gonadotropin-Beta (hCG-Beta)	MAB106P	ELISA	
	Human Chorionic Gonadotropin-Intact (hCG)	MAB105P	ELISA	
	Progesterone	MAB234P	ELISA (competitive)	
	Progesterone	MAB235P	ELISA (competitive)	
	Progesterone	MAB286P	ELISA (competitive)	
	Thyroid Stimulating Hormone- Beta (hTSH-beta)	MAB130P	ELISA	Capture / Detector

MONOCLONAL ANTIBODIES

Disease Area	Product Name	Product Code	Application	Capture / Detector
Immunoglobulins (anti-Human)	IgA	MAB217P	ELISA	
	IgG1	MAB146P	ELISA	
	IgG2	MAB220P	ELISA	
	IgG3	MAB221P	ELISA	
	IgG4 Fc	MAB154P	ELISA / IHC / WB	
	IgG Fc	MAB218P	ELISA	
	IgG Heavy Chain	MAB142P	ELISA / IHC / WB	
	Ig Kappa Light	MAB199P	ELISA / WB	
	Ig Lambda Light Chain	MAB219P	ELISA / WB	
	IgM	MAB216P	ELISA	
Infectious Disease	Adenovirus	MAB604P	ELISA / IFA / LF / WB	Capture
	Adenovirus	MAB605P	ELISA / IFA / LF / WB	Tracer
	B. anthracis	BB1008	ELISA / LF	
	Borrelia burgdorferi	MAB746P	ELISA / IFA	
	Brucella	BB1071	ELISA / LF	
	Brucella	BB1063	ELISA / LF	
	Burkholderia	BB1158	ELISA / LF	
	Burkholderia	BB1159	ELISA / LF	
	Campylobacter jejuni	MAB229P	ELISA	
	Campylobacter jejuni	MAB840P	ELISA / WB	
	Campylobacter jejuni	MAB841P	ELISA / WB	
	Campylobacter jejuni	MAB842P	ELISA / WB	
	Campylobacter spp.	BM465-N6G1	ELISA / LF / WB	Capture & Detector (self-pairing)
	C. difficile GDH	MAB294P	ELISA	Capture
	C. difficile GDH	MAB295P	ELISA	Detector
	C. difficile toxin B	BM347-N4A8	ELISA / LF / WB	Capture
	C. difficile toxin B	BM347-T4G1	ELISA / LF / WB	Detector
	Chikungunya Virus	MAB243P	ELISA / WB	
	Chikungunya Virus	MAB244P	ELISA / WB	
	Chikungunya Virus	MAB245P	ELISA	
	Coxiella	BB1214	ELISA / LF	
	Dengue NS1 subtype 2	BM339-P3D8	LF	Capture / Detector
	Dengue NS1 subtype 2	BM339-P6C6	LF	Capture / Detector
	Dengue NS1 subtype 2	BM339-T3H2	LF	Capture / Detector
	Ebola Zaire	BM431-V1D1	LF / WB	
	E. coli Serotype O157	MAB770P	ELISA / IFA	
	HIV-1 p24	MAB246P	ELISA / LF	Detector
	HIV-1 p24	MAB247P	ELISA	Capture / Detector
	HIV-1 p24	MAB248P	ELISA / LF	Detector
	HIV-1 p24	MAB249P	ELISA / LF	Capture
	H. pylori	BM345-M5F6	LF	Capture / Detector
	H. pylori	MAB807P	ELISA / IFA / WB	
	Influenza A	MAB722P	ELISA / IFA / IHC	Capture
	Influenza A	MAB803P	ELISA / IFA	Detector
	Influenza B	MAB7042P	ELISA / IFA / ICT	
	Leptospira	BM353-N8A9	LF	

Disease Area	Product Name	Product Code	Application	Capture / Detector
Infectious Disease	Listeria spp	BM401-T7B6	LF	Capture
	Mycoplasma pneumoniae	MAB134P	ELISA / WB	
	Mycoplasma pneumoniae	MAB135P	ELISA / WB	
	Mycoplasma pneumoniae	MAB854P	ELISA / IFA / WB	
	Mycoplasma pneumoniae	MAB855P	ELISA / IFA / WB	
	Norovirus	MAB223P	ELISA	
	Norovirus	MAB224P	ELISA	
	Norovirus	MAB225P	ELISA	
	Norovirus	MAB226P	ELISA	
	Norovirus	MAB227P	ELISA	
	Norovirus	MAB228P	ELISA	
	Norovirus	MAB242P	ELISA	
	Norovirus	MAB287P	ELISA	
	Norovirus	MAB288P	ELISA	
	Norovirus	MAB289P	ELISA	
	Norovirus GI and GII	BM349-G1G1	LF	Capture
	Norovirus GII	BM349-H1C3	LF	Capture
	Respiratory Syncytial Virus (RSV)	MAB601P	ELISA / IFA / LF / WB	Capture / Detector
	Respiratory Syncytial Virus (RSV)	MAB602P	ELISA / IFA / LF / WB	Capture / Detector
	Respiratory Syncytial Virus (RSV)	MAB603P	ELISA / IFA / LF / WB	Detector
	Rift Valley Fever Virus	MAB239P	ELISA	Capture / Detector
	Rift Valley Fever Virus	MAB240P	ELISA	Capture / Detector
	Rotavirus	MAB606P	ELISA / WB	Capture / Detector
	Rotavirus	MAB831P	ELISA / IHC	Capture
	Rotavirus	MAB833P	ELISA / IHC	Detector
	Streptococcus Group A Rabbit	MAB887P	ELISA	Capture/Detector (self pairing)
	Y. pestis	BB1190	ELISA / LF	
	Zika NS1	MAB315P	ELISA	Capture
	Zika NS1	MAB316P	ELISA	Capture
	Zika NS1	MAB317P	ELISA	Capture
	Zika NS1	MAB318P	ELISA	Detector
	Zika NS1	MAB319P	ELISA	Capture
	Renal	Cystatin C	MAB236P	ELISA
Cystatin C		MAB237P	ELISA	Capture
Cystatin C		MAB238P	ELISA	Detector
Sepsis	Procalcitonin	BM448-H9F1	ELISA	Capture / Detector
	Procalcitonin	BM448-K8C7	ELISA	Capture
	Procalcitonin	BM448-V4A1	ELISA	Capture / Detector
Thyroid	T3	MAB124P	ELISA (competitive)	
	T3	BM440-P3H6	ELISA	Capture
	Thyroid Stimulating Hormone- Alpha (hTSH-alpha)	MAB132P	ELISA	Capture / Detector
	Thyroid Stimulating Hormone- Beta (hTSH-beta)	MAB128P	ELISA	Detector
	Thyroid Stimulating Hormone- Beta (hTSH-beta)	MAB130P	ELISA	Capture / Detector
Veterinary	Equine LH Alpha Subunit	MAB204P	ELISA / WB	
	Equine LH Beta Subunit	MAB202P	ELISA / WB	
	Equine LH Beta Subunit	MAB203P	ELISA / WB	
	Streptococcus equi subsp. equi	MAB211P	ELISA	Capture / Detector
	Streptococcus equi subsp. equi	MAB212P	ELISA	Capture / Detector

EXPLOSIVES

Product Name	Product Code	Application
PETN	EW75A	ELISA / LF
RDX	EW75B	ELISA / LF
TNT	EW75C	ELISA / LF

MOUSE MONOCLONALS

RECOMMENDED MATCHED PAIRS FOR IMMUNOASSAYS

Marker	Application	Paired Capture Ab	Paired Detector Ab
Adenovirus	ELISA / LF	MAB604P	MAB605P
AMH	ELISA / LF	BM459-P2B4	BM459-S4E8
C.difficile Glutamate Dehydrogenase (GDH)	ELISA	MAB294P	MAB295P
C. difficile toxin B	LF	BM347-N4A8	BM347-T4G1
CA15-3	ELISA	BM236-V2G9	BM236-K6A5
Campylobacter	ELISA / LF	BM465-N6G1 (self pairing)	BM465-N6G1 (self pairing)
Cystatin C	ELISA	MAB236P	MAB238P
Cystatin C	ELISA	MAB237P	MAB238P
D-dimer	ELISA	BM243-3B6	BM243-1D2
D-dimer	ELISA	MAB285P	MAB284P
D-dimer	LF	BM243-1D2	BM243-3B6
Dengue NS1 subtype 2	LF	BM339-T3H2	BM339-P3D8
Dengue NS1 subtype 2	LF	BM339-T3H2	BM339-P6C6
Equine Luteinising Hormone (LH) Beta Subunit	ELISA / WB	MAB202P	MAB204P
Equine Luteinising Hormone (LH) Beta Subunit	ELISA / WB	MAB203P	MAB204P
Ferritin	ELISA	MAB290P (self pairing)	MAB290P (self pairing)
Free beta HCG Monoclonal Antibody	ELISA	BM317-T7H6	BM317-S8D2
Free Prostate Specific Antigen (PSA)	ELISA	MAB296P	MAB292P
Galectin 3	ELISA	BM451-N8E8	BM451-K7H2
Galectin 3	ELISA	BM451-N8E8	BM451-V7G5
HbA1c	ELISA	BM302-F1B4	BM300-F7C2
HbA1c	ELISA / LF	BM302-F1B4 or BM302-S6B9	BM300-F7C2
Helicobacter pylori	ELISA / IFA / WB	MAB807P	MAB807P
HIV-1 p24	ELISA	MAB249P	MAB246P
HIV-1 p24	ELISA	MAB247P	MAB248P
HIV-1 p24	ELISA	MAB249P	MAB247P
HIV-1 p24	ELISA	MAB247P	MAB249P
IGFBP3	ELISA	BM396-P6F9	BM396-V3C7

Marker	Application	Paired Capture Ab	Paired Detector Ab
Influenza A	ELISA	MAB722P	MAB803P
Influenza A	LF	MAB722P	MAB722P
Influenza B	ELISA	MAB7042P	MAB7042P
Lactoferrin	ELISA	MAB232P	MAB233P
Lactoferrin	ELISA	MAB233P	MAB232P
Myeloperoxidase	ELISA	MAB208P	MAB209P
Myeloperoxidase	ELISA	MAB209P	MAB208P
Norovirus	ELISA	Please enquire*	
Osteopontin	ELISA	MAB222P	MAB193P
Osteopontin	ELISA	MAB193P	MAB222P
Procalcitonin	ELISA	BM448-K8C7	BM448-V4A1
Procalcitonin	ELISA	BM448-V4A1	BM448-H9F1
Procalcitonin	ELISA	BM448-H9F1	BM448-V4A1
Prostate Specific Antigen (PSA)	ELISA	MAB292P	MAB291P
Prostate Specific Antigen (PSA)	ELISA	MAB291P	MAB292P
Respiratory Syncytial Virus (RSV)	ELISA / LF	MAB601P	MAB601P
Respiratory Syncytial Virus (RSV)	ELISA / LF	MAB601P	MAB602P
Respiratory Syncytial Virus (RSV)	ELISA / LF	MAB602P	MAB603P
Rift Valley Fever Virus	ELISA	MAB240P	MAB239P
Rift Valley Fever Virus	ELISA	MAB239P	MAB240P
Rotavirus	ELISA / LF	MAB606P	MAB606P
Rotavirus	ELISA	MAB831P	MAB833P
ST2	ELISA	BR139-S7B7	BR139-V8D4
ST2	ELISA	BR139-T3G5	BR139-V8D4
Streptococcus equi subsp. Equi	ELISA	MAB212P	MAB211P
Streptococcus equi subsp. Equi	ELISA	MAB212P	MAB212P
Streptococcus equi subsp. Equi	ELISA	MAB211P	MAB212P
Streptococcus Group A Rabbit	ELISA / LF	MAB887P	MAB887P

* Over 50 pairings to GI and GII genogroups, including GII.4 2012 Sydney variant

POLYCLONAL ANTIBODIES

Disease Area	Biomarker	Product Code	Species Raised in
Anemia	Ferritin	BP230-3	Rabbit
Control/Tags	Bromodeoxyuridine-5 (BrdU)	PAB105P	Sheep
	Biotinylated Bromodeoxyuridine-5 (BrdU)	PAB105B	Sheep
	HRP-conjugated Bromodeoxyuridine-5 (BrdU)	PAB105H	Sheep

ANTIBODY DEVELOPMENT

BBI Solutions offers expert partnership in the development of monoclonal or polyclonal antibodies, cGMP production and purification of antibodies. An industry leading advantage, 'MultiPure' allows customers to see assay performance data eight weeks sooner than typical developments and use that data to inform clone selection.

Development & production

- + Monoclonal antibody development
- + Polyclonal antibody development
- + *In vitro* antibody production

Purification

- + Protein A purification
- + Protein G purification
- + Low endotoxin purification

Characterisation

- + ELISA
- + Western Blot
- + SDS-PAGE
- + Isoelectric Focusing (IEF)
- + Endotoxin testing
- + Matched pair evaluation
- + SEC

Key benefits



+ Antigen Analysis

Option to receive a custom report, prepared by an immunologist, to identify the right antigen strategy for any goal



+ Detailed Project Plan

Identify goals, reagents, screening strategies and set contingency plans to ensure timely development



+ MultiPure

Generate up to 1mg discovery-grade purified antibodies from fusion candidates during hybridoma development to select clones based on end use performance



+ Characterisation Assays

Characterise antibody candidates beyond standard indirect ELISA screening, so only the right antibodies go to subcloning



+ Technical Support

Hands on support from project managers, technical sales team and immunology experts at every project milestone

Contact BBI Solutions today to develop the right antibodies for any application

+44 (0) 1495 363 000 or email sales@bbisolutions.com

Accelerate Timelines

Timely development is a high priority for most antibody development customers. Thorough project planning, rapid immunisation protocol (RIMMS), and efficient data analysis at every project milestone, work together to accelerate project timelines. When goals change during the course of development, planning and communication allow BBI to be agile in making decisions and change the pathway to allow a project to be kept on track, meet new goals, and get the right result quicker.

A typical project plan*

	1-2 WEEKS	4 WEEKS	2-3 MONTHS	6-8 WEEKS	1-2 WEEKS		
PHASE	Planning	Immunisation	Fusion	General Discovery Reagents	Advanced Screening	Subcloning & Production	Monoclonal Assays
ACTIVITY	Antigen review Project planning	RIMMS protocol Serum screening	Primary screening Scale-up and cryopreservation of fusion product selections Secondary screening	MultiPure technology offers novel early access to purified samples	Matched pair evolution Blocking assays Matrix evaluation	Top-ranked fusion products subcloned Monoclonal cell line cryopreservation cGMP <i>in vitro</i> production	Analytical characterisation of antibody(s) Fit-for-use performance evaluation
DELIVERABLES	+ Antigen analysis report + Project plan	+ Serum titre data + Boosting strategy (if needed)	+ Screening data + Banked cryo-vials + Supernatant	+ Discovery-scale purified antibody + Biotin-labelled conjugates (optional)	+ Advanced screening report + Subcloning candidates identified	+ Screening data + Assessment of stability + Pilot production recommendations	+ Screening data + Assessment of stability + Performance characterisation report summary

*representative

What you can expect from BBI

Advanced screening capabilities

'MultiPure' allows customers to select clones based on specificity, sensitivity, matched pair compatibility, matrix compatibility, diversity and native recognition.

Knowledge and experience

The antibody technical team brings over 27 years of deep expertise in immunology, antibody and immunoassay development to every project.

cGMP manufacturing standards

cGMP *in vitro* antibody manufacturing and custom production options to secure long term supply management.

Unparalleled customer communication

Customers are informed at all project stages of the data and analysis they need to make goal driven decisions.

ANALYTE DEPLETED SERUM

Product Description	Product Code	Matrix Available
Immunoglobulin IgG depleted processed serum	SF142-7	Defibrinated Plasma
T3/T4 depleted processed serum	SF231-7	Defibrinated Plasma
Steroid depleted serum	SF236-2	Off-the-clot Serum
Vitamin D depleted processed serum	SF504-7A	Defibrinated Plasma
Immunoglobulin depleted serum	SF505-2	Off-the-clot Serum
Testosterone depleted processed serum	SF518-7A	Defibrinated Plasma

Custom options and development products available.

Examples include Iron Depleted, Insulin Depleted, Ferritin Depleted, Hormone Depleted, TSH/T3/T4 Depleted.

PATIENT SAMPLES

Disease Area	Product Name	Product Code	Matrix Available	Source
Pregnancy/Fertility	Pregnancy Serum Samples	SG381-2	Off-the-clot Serum	Europe/USA

Minimum order applies.

DISEASE STATE PLASMA

Disease Area	Product Name	Product Code	Matrix Available	Source
Allergy	IgE Positive Citrate Plasma	SH234-7	Defibrinated Plasma	USA
Autoimmune/ Inflammation	Antiphospholipid Syndrome Positive Citrate Plasma	SH153-4	Citrate Plasma	USA
	Rheumatoid Factor Positive Citrate Plasma	SH155-4	Citrate Plasma	Europe/USA
Infectious Disease	Toxoplasma IgG Positive Citrate Plasma	SH240-4	Citrate Plasma	Europe
	Cytomegalovirus IgG Positive Citrate Plasma	SH242-4	Citrate Plasma	Europe
	Synthetic Rubella IgM Serum	SH252-9	Spiked Defibrinated Plasma	Europe
	HBsAg Positive Plasma	SH256-4	Citrate Plasma	Europe
	Hepatitis B Core IgM Positive Citrate Plasma	SH258-4	Citrate Plasma	USA
	Cytomegalovirus IgM Positive Citrate Plasma	SH272-4	Citrate Plasma	Europe
	Toxoplasma IgM Positive Citrate Plasma	SH275-4	Citrate Plasma	Europe
Pregnancy / Fertility	HIV-2 Positive Citrate Plasma	SH316-4	Citrate Plasma	USA
	Third Trimester Pregnancy Serum	SH284-2	Off-the-clot Serum	Europe
	First Trimester Pregnancy Serum	SH285-2	Off-the-clot Serum	Europe
Thyroid	Anti-Tg Positive Processed Serum	SH483-7	Defibrinated Plasma	Europe
	Anti-TPO Positive Processed Serum	SH484-7	Defibrinated Plasma	Europe

NANOPARTICLES

We have been supplying high quality nanoparticles and fully optimised gold conjugates for over 30 years, enabling the development of robust, reliable assays and consistent results time after time. Providing a uniform shape and standard size, with a CV of <8%, our gold colloid is available in a variety of sizes from 20nm - 80nm and is available in batch volumes up to 350L.

Particle Type	Size	Product Code	Available Sizes
Gold Nanoparticles	5nm	EM.GC5	20ml, 100ml, 1l
	10nm	EM.GC10	20ml, 100ml, 1l
	15nm	EM.GC15	20ml, 100ml, 1l
	20nm	EM.GC20	20ml, 100ml, 1l
	30nm	EM.GC30	20ml, 100ml, 1l
	40nm	EM.GC40	20ml, 100ml, 500ml, 1l
	50nm	EM.GC50	20ml, 100ml, 1l
	60nm	EM.GC60	20ml, 100ml, 1l
	80nm	EM.GC80	20ml, 100ml, 1l
	100nm	EM.GC100	20ml, 100ml, 1l
	150nm	EM.GC150	20ml, 100ml, 1l
	200nm	EM.GC200	20ml, 100ml, 1l
	250nm	EM.GC250	20ml, 100ml, 1l
	20nm, 40nm, 60nm, 80nm	GCIKITDIAG Plus	4x100ml
	20nm, 40nm, 60nm, 80nm	GCIKITDIAG	4x20ml

Our High OD Gold nanoparticles are available as 20nm and 40nm and at concentrations of OD5 and OD10.

GOLD CONJUGATES

Conjugate Type	Product Name	Product Code**
Anti-Biotin Conjugates	Monoclonal anti biotin 40nm	BA.MAB40
	Goat anti biotin	BA.GAB20 / BA.GAB40
Fertility Conjugates	Anti-beta hCG*	BA.HCG40
	Anti-LH*	BA.LH40
Anti-Human Conjugates	Protein A	BA.PAG20 / BA.PAG40
	Goat anti human IgG Fc fragment	BA.GAH40
	Goat anti human IgA	BA.GAHA40
Control lines & Anti-species	Chicken IgY*	CONT.CHICK
	Goat anti-rabbit IgG	BA.GAR40
	Goat anti-mouse	BA.GAM40
Other Conjugates	BSA conjugate	BA.BSA40
Capture Reagents	Polystreptavidin 200	01041470Z
	Polystreptavidin 350	01041049L

* Matched pair available on request.

** 20 denotes 20nm particles used in conjugate, 40 denotes 40nm particles used in conjugate.

“The gold and conjugation processes at BBI are unrivalled – we found that BBI was the best that we could work with.”

CEO James Lousararian, Verax Biomedical

CUSTOM CONJUGATION

Our custom conjugation service provides high quality conjugates, optimised to meet your unique quality control requirements. Our experienced scientists work directly with you to provide sensitive, specific, and reproducible conjugates.

The Service

- + Develop high quality conjugates using antibodies, antigens, oligos or aptamers provided by you or sourced by us
- + Conjugate to numerous nanoparticles including BBI Solutions' world renowned gold
- + Optimise the sensitivity of your conjugate to meet your pre-agreed requirements and stability
- + Batch production up to 24 litres at OD10, or alternatively we can provide a custom OD preparation

We conjugate to numerous nanoparticles including:

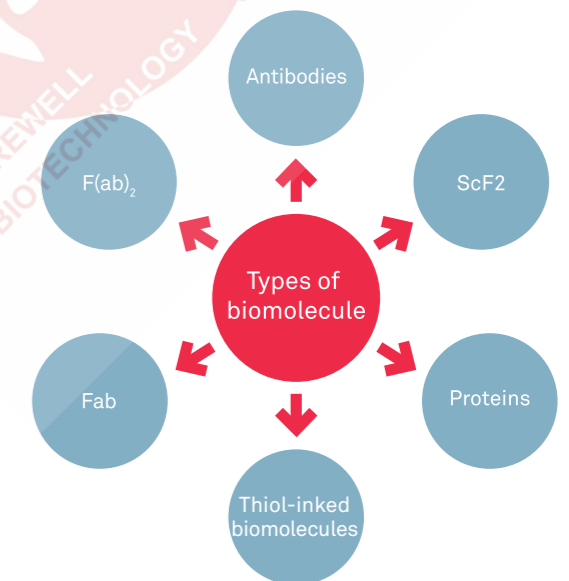
- + Gold nanoparticles
- + Latex nanoparticles
- + Magnetic nanoparticles

Designed to meet your individual needs

Specificity, sensitivity and reproducibility should define the specification and fulfil your absolute minimum expectations of the conjugate.

Our scientists work in partnership with customers to bring all the vital ingredients together and provide sensitive, stable, reproducible conjugates time after time.

Once you are happy with your conjugate, we can put a commercial supply plan in place to ensure security of supply.



Discuss your requirements with our technical team on +44 (0) 1495 363 000 or email sales@bbisolutions.com

LATERAL FLOW ASSAY DEVELOPMENT

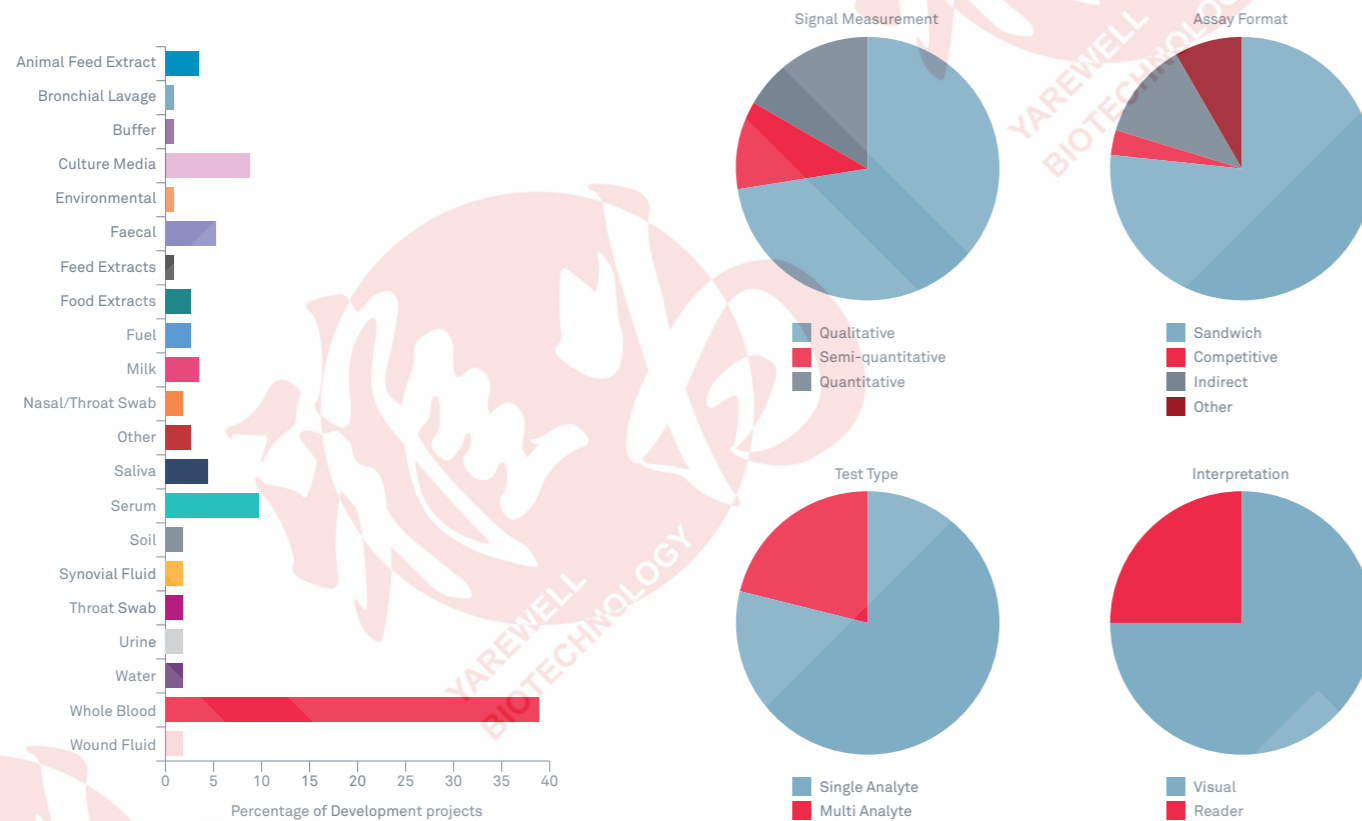
Are you looking to outsource your lateral flow test development?

At BBI Solutions we understand that getting a fast, accurate result is critical.

Whether you are looking to **improve an existing assay** or **develop a new assay**, we offer a partnership approach to deliver robust and reliable tests ready for the global market.

Our Capabilities

Our capabilities allow us to take assay development from initial antibody screening through to final manufacture and beyond. We have over 25 years' experience developing more than 250 qualitative, semi quantitative and quantitative assays.



Market Segments

Our experience has been gained across multiple sectors including:

- + Human Clinical
 - Lab based
 - Point of care
 - Remote
- + Agricultural
- + Animal Diagnostics
- + Environmental

- + Drugs of Abuse
- + Food Safety
- + Defence
- + Consumer Healthcare

Within the human clinical IVD marketplace we have experience of working with multiple analytes including; HIV, TB, Flu A and B, Calprotectin, *Legionella* and Progesterone. In addition, we have developed over 25 biodefence assays for a variety of customers.

A dedicated cross-functional team of scientists works exclusively on all phases of your project from Feasibility, Optimisation, to Verification and Validation. At the end of the development cycle, we will hand over the design history file so that you fully 'own' your test.

Depending on the complexity of the assay, a typical development programme for a standard IVD will work as follows:

A typical project plan*

	1 MONTH	5 MONTHS	5 MONTHS	4 MONTHS	
PHASE	Proof of principle	Feasibility	Optimisation and Characterisation	Validation	Manufacture
ACTIVITY	Exploration of initial idea and theoretical viability	Collating customer requirements and investigation of formulations and processes	Characterisation and selection of final materials, formulation and processes. Transfer to manufacture	Full verification and validation of manufacturing processes to ensure assay robustness	Opportunity to implement manual, semi automated or automated solutions (scale dependent)
DELIVERABLES	+ Clear pathway identified	+ A prototype assay	+ An optimised assay and pilot batches	+ Validation batches and product claims	+ Routine manufacture
*representative	[Timeline bar showing duration of each phase]				

MORFFI SIGNAL ENHANCEMENT TECHNOLOGY

Next generation assay development to enhance the performance of your test

BBI has an unparalleled technical skill set and access to the latest performance enhancing technologies to help customers make the best test possible.

Our signal enhancement technology has the potential to improve the performance of your lateral flow assay, resulting in a key competitive advantage in your marketplace. The *Morffi* technology provides an up to 10-fold improvement in the limit of detection, enhanced sensitivity and it may offer a faster time-to-result. This next generation technology also overcomes the issues commonly associated with BSA conjugate blocking to improve analyte-specific binding.

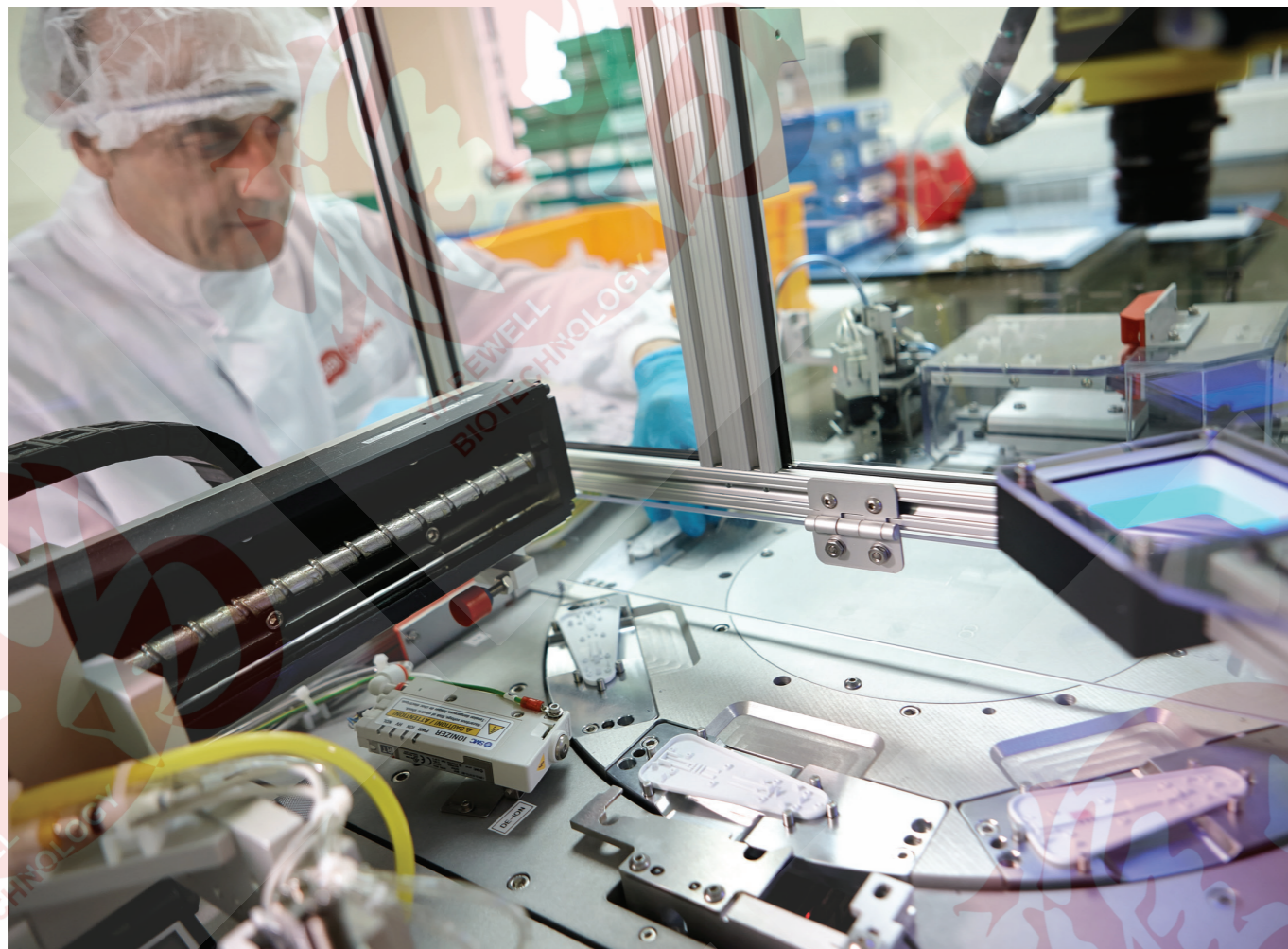
LATERAL FLOW ASSAY MANUFACTURE

Robust and flexible manufacturing options

You may be a new start-up company looking for someone to manufacture your assay, or a fast growing company under pressure to meet increasing demand. Our manufacturing service will deliver the results you need to fulfil your customer's expectations:

Key Benefits

- + **Flexible options** – catering for increased demand and technically challenging manufacture
- + **Technical transfer to manufacturing** – BBI has extensive experience and expertise in successfully transferring IVD products to manufacturing
- + **Competitive product pricing** – using our automation capabilities to manufacture on a large scale will drive production costs down without compromising quality
- + **Quality system certification** – we're certified to the world recognised Quality System for Medical Device and IVD Manufacturers, ISO 13485 and have experience working on FDA projects



SMARTPHONE DIAGNOSTIC READER

BBI's Lateral Flow Test Interpretation Capabilities

All assay development is driven by the end users' needs which includes how the test is interpreted. Most tests developed are still visually read, but BBI Solutions has a wealth of reader experience from our own Novarum innovative smartphone diagnostic reader for remote or in-field testing to the leading brands of lab based lateral flow readers, as well as working with our customers' own reader designs.



Novarum™ Smartphone Diagnostic Reader

Mobile health (mhealth) technology is growing exponentially, creating new opportunities for pharmaceutical and diagnostic companies to shape the future of digital healthcare. Recognising the increasing convergence of mobile phone disruption within point of care testing and the shift towards decentralised healthcare, BBI Solutions acquired leading smartphone diagnostics specialist, Novarum DX, in late 2016.

What does the Novarum Smartphone Technology Offer?

Novarum leverages mobile connectivity and intuitive app development to transform a smartphone into a diagnostic reader. The technology supports infectious disease tracking and diagnosis out in the field and can help patients to monitor chronic conditions from the comfort of their own home. Mobile phones compensate for a lack of physical infrastructure, particularly for populations living in resource poor settings or remote environments. Testing can be performed from the point of care, with results of lab-quality, shared securely via a mobile eco-system to healthcare practitioners online.

KEY BENEFITS



- + **Help at-risk Groups**
to access regular healthcare from the comfort of home



- + **Support Technician Fieldwork**
with infectious disease diagnosis and tracking from remote locations



- + **Reduce Test Error Risk**
with simple instructions which facilitate correct self-testing



- + **Quick and Accurate**
results of lab-quality available from the point of care



Get in touch to arrange a sample or find out more about any of our products and services

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