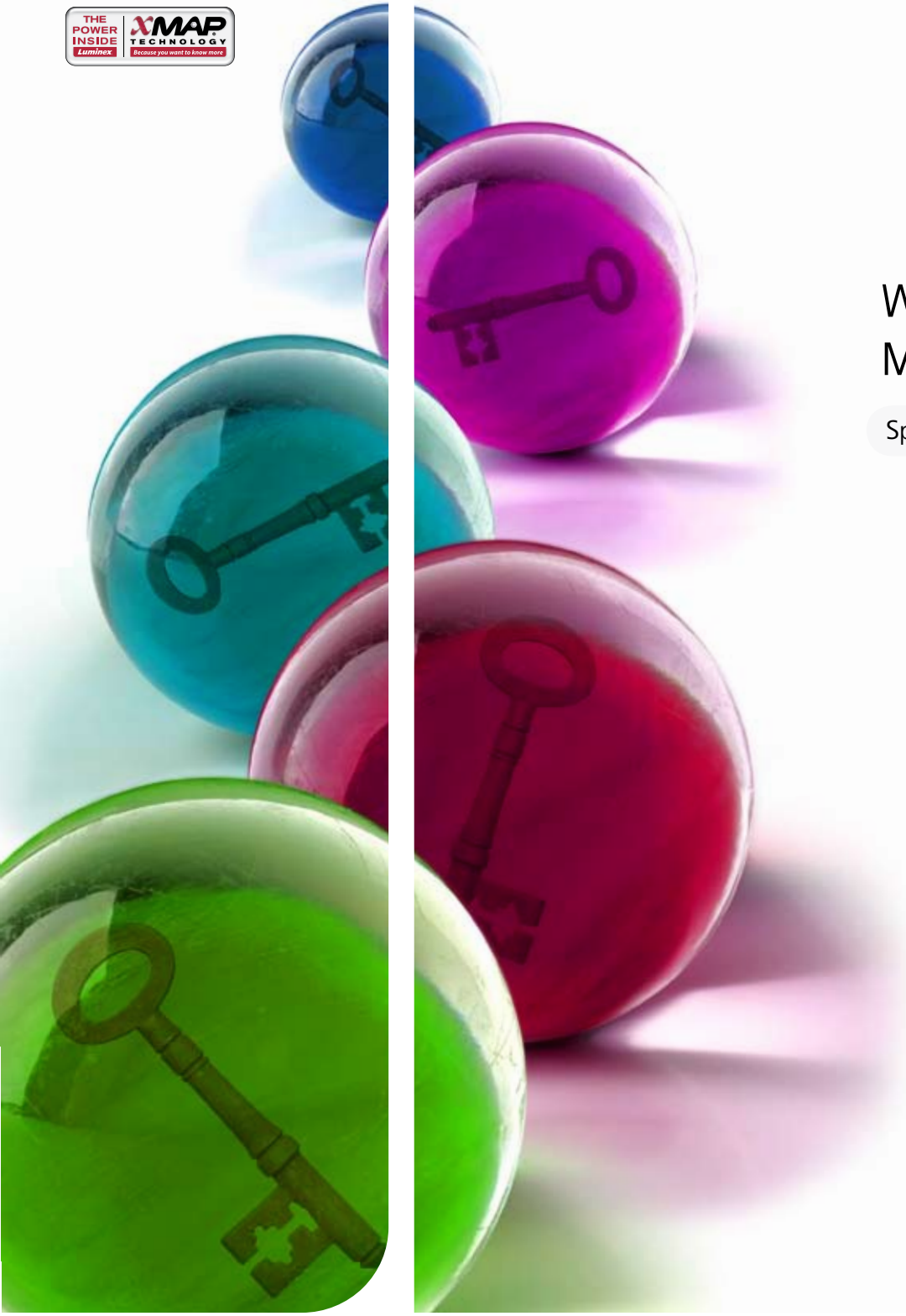


WideScreen® BeadPlex™ Multiplex Assays

Spring 2010

Cancer Panels

Cancer Biomarkers

Cancer Panel 1 (Biomarkers)

Cat No: BPHCP001-6

CA 125	CEA (Carcinoembryonic Antigen)
CA15-3	α-Fetoprotein (AFP)
CA 19-9	Prolactin

Cancer Panel 2 (Growth Factors)

Cat No: BPHCP002-12

Amphiregulin	Epiregulin	PIGF
Betacellulin	FGF-basic (FGF2)	Tenascin C
EGF	HB-EGF	TGFα
EGFR (Soluble)	PDGF-BB	VEGF

MMP Panel

Cat No: 72137-3

MMP-1	MMP-9
MMP-3	MMP-10
MMP-8	MMP-13

Cell Signaling Cancer Markers

Phospho-EGFR Profiler NEW!

Cat No: 72254-3 (Pre-configured)

Cat No: BPHPEGFR-9 Mix & Match Configuration coming soon.

EGFR (Total)	EGFR (Ser1047)
EGFR (Thr654)	EGFR (Tyr1068)
EGFR (Thr669)	EGFR (Tyr1086)
EGFR (Tyr845)	EGFR (Tyr1173)
EGFR (Tyr1045)	

Receptor Tyrosine Kinases

Cat No: 71942-3 (Total)	Cat No: 71943-3 (pTyr)
Mix & Match Configuration	BPHRTK01-10 Coming Summer 2010!
Analytes are available individually as well	
EGFR Total	EGFR pTyr
IGF-1R Total	IGF-1R pTyr
Met (HGFR) Total	Met (HGFR) pTyr
PDGFRβ Total	PDGFRβ pTyr
erbB2 (HER2) Total	erbB2 (HER2) pTyr
VEGFR2/KDR/Flk Total	VEGFR2/KDR/Flk pTyr
Tie-2 Total	Tie-2 pTyr
HER3 coming soon!	HER3 pTyr coming soon!
HER4 coming soon!	HER4 pTyr coming soon!
Insulin Receptor (IR) coming soon!	Insulin Receptor (IR) pTyr coming soon!

Breast Cancer Panel 1

Cat No: 72088-3

Angiopoietin-2	IGF-1R
Angiogenin	PAI-1
HER2 (erbB2)	Progesterone Receptor

Breast Cancer Panel 2

Cat No: 72089-3

EGFR	TIMP-2
ERα	VEGFR2/KDR/Flk
Fas	

Breast Cancer Panel 3

Cat No: 72090-3

TIMP-1	uPA
E-Cadherin	IGFBP-3

Heat Shock Proteins

HSP Panel Coming Summer 2010!

Cat No: BPHHSP-5COM

Cat No: BPHHSP-5 Mix & Match Configuration coming soon.

HSP27 (Total)	HSP70
HSP60	HSP90a
phospho-HSP27 (Ser78/Ser82)	

MAP Kinase / ERK Pathway Panels

EpiTag™ ERK Pathway Panel 1

Cat No: 71782-3

phospho-B-Raf (Ser446)
phospho-MEK1/2 (Ser217/Ser221, Ser222/Ser226)
ERK1 (Total)
ERK2 (Total)
phospho-ERK1/2 (Thr202/Tyr204, Thr185/Tyr187)

EpiTag™ ERK Pathway Panel 2

Cat No: 71891-3

Raf-1 (Total)	MEK2 (Total)
STAT1 (Total)	phospho-MEK1/2 (Ser217/Ser221, Ser222/Ser226)
MEK1 (Total)	phospho-Raf-1 (Ser338)

EpiTag™ ERK Pathway Singleplex Analytes

Please visit our website for Catalog Numbers and additional product information.

phospho-B-Raf (Ser446)	ERK1 Total
Raf-1 Total	ERK2 Total
STAT1 Total	MEK1 Total
phospho-Raf-1 (Ser338)	MEK2 Total
Raf-1 (Total) High Sensitivity	
phospho-STAT3 (Ser727)	
phospho-MEK1/2 (Ser217/Ser221, Ser222/Ser226)	
phospho-ERK1/2 (Thr202/Tyr204, Thr185/Tyr187)	
phospho-RSK2 (Ser386)	

PM Available in Pre-Mixed Configuration

MM Available in Mix & Match Configuration

Cardiovascular Disease (CVD)

Human

CVD1 (Apolipoproteins)

Cat No: BPHCVD01-7 Mix & Match configuration

Apo A-I	Apo CIII
Apo A-II	Apo E
Apo B	Apo H
Apo CII	Apo J

CVD2 (Cytokines/Chemokines)

Cat No: 72014-3

IL-6	MIP-1α
IL-8	MIP-1β
MCP-1	TNF-α

CVD3

Cat No: BPHCVD03-6 Mix & Match configuration

E-selectin	Leptin
P-selectin	Osteopontin
ICAM-1	sRAGE

CVD4

Cat No: BPHCVD04-6 Mix & Match configuration

H-FABP	MPO (Myeloperoxidase)
LOX-1	Thrombomodulin
MDA-LDL	NT-Pro-BNP (Myoglobin N-terminal-Prohormone-Brain Natriuretic Peptide)

CVD5 (Acute Phase)

Cat No: BPHCVD05-8 Mix & Match configuration

Alpha-2-Macroglobulin	Haptoglobin
CRP (C-Reactive Protein)	Lp(a) (Lipoprotein A)
Fetuin A	SAP (Serum Amyloid P-Component)
Fibrinogen	vWF (von Willebrand Factor)

CVD6

Cat No: BPHCVD06-5 Mix & Match configuration

Adiponectin	PAI-1
Cystatin C	VCAM-1
EN-RAGE	

Mouse

Mouse CVD1

NEW!

Cat No: BPMCVD01-5 Mix & Match configuration

Clusterin	Haptoglobin
CRP	SAP (Serum Amyloid P-Component)
Cystatin C	

Endocrinology

Human

Human Hormone Panel 1

Cat No: 72276-3

FSH (Follicle stimulating hormone)	Testosterone
PR (Progesterone)	LH (Luteinizing hormone)
ß-hCG (Human Chorionic Gonadotrophin (beta subunit))	

Metabolism Panels

Human

Human Metabolism Panel 1

Cat No: 72283-3

ACE	Leptin
Cortisol	Pancreatic polypeptide
GLP-1 (Total)	Resistin
Insulin	TSH (Thyroid-Stimulating hormone)

Human Metabolism Panel 2

Cat No: 72290-3

AgRP	GLP-1 (active)
ASP	PYY
CNTF	Secretin
C-Peptide	

Rat

Rat Metabolism Panel 1

Cat No: 72296-3

ACE	Insulin
GLP-1 (Total)	Leptin
Glucagon	Resistin

Toxicity / Safety Testing

Human Kidney Injury / Toxicity

Human Kidney Damage Panel 1

Coming Summer 2010!

Cat No: BPHKT001-8 Mix & Match configuration

Calbindin	VEGF
Clusterin	SCF (Stem Cell Factor)
GST-α	TIMP-1
KIM-1	GST-π

Human Kidney Damage Panel 2

Coming Summer 2010!

Cat No: BPHKT002-5 Mix & Match configuration

ß2-Microglobulin	Osteopontin
Cystatin C	NGAL (Lipocalin)

Human Kidney Damage Panel 3

Coming Summer 2010!

Cat No: BPHKT002-3 Mix & Match configuration

Albumin
TFF3
THP (Tamm-Horsfall Protein)

Rat Kidney Toxicity

Rat Kidney Toxicity Panel 1

Cat No: 72164-3 Pre-mixed configuration

ß2-Microglobulin	VEGF
TIMP-1	KIM-1
GST-α	

Rat Kidney Toxicity Panel 2

Cat No: 72174-3 Pre-mixed configuration

Calbindin	Osteopontin
NGAL (Lipocalin)	Cystatin C
Clusterin	

WideScreen® BeadPlex™ Rat Kidney Toxicity Panels

Panels of key biomarkers used to detect kidney impairment due to drug-induced toxicity.

Commonly used assessment of nephrotoxicity uses clinical markers that appear late and, are therefore unreliable indicators of kidney damage. The need for earlier and more accurate detection of renal toxicity presented itself. In 2008, the Predicitive Safety Testing Consortium (PSTC), a public-private consortium led by the Critical Path Institute, submitted a list of urinary biomarkers indicative of drug-induced kidney damage to the FDA and EMEA regulatory authorities. The FDA and EMEA have issued new guidelines on the submission of the biomarkers (KIM-1, ß2-microglobulin, cystatin C, clusterin, albumin, trefoil factor-3, and total protein) as indicators of kidney damage in pre-clinical studies. EMD offers multiplex assay kits that include four of the seven newly accepted biomarkers (KIM-1, ß2M, Cystatin C, and Clusterin) along with six other key protein markers for kidney injury.

Mitochondrial Toxicity

Human Mitochondrial Oxidative Phosphorylation

Coming Summer 2010!

Cat No: BPHMTOP1-8 Mix & Match configuration
Cat No: BPHMTOP1-8 COM Pre-mixed configuration

Complex I	Complex V
Complex II	NNT
Complex III	
Complex IV	

Human Mitochondrial Biogenesis

Coming Summer 2010!

Cat No: BPHMTBG1-2

Complex II	Complex IV

Mitochondrial Toxicity: OXPHOS

Oxidative phosphorylation produces more than 95% of the conserved cellular energy in the form of ATP under normal conditions. This process involves 5 different protein complexes, NADH–ubiquinone oxidoreductase or Complex I, succinate ubiquinone oxidoreductase (Complex II), ubiquinone cytochrome c oxidoreductase (complex III), cytochrome c oxidase (Complex IV) and the ATP synthase (Complex V). The overall process of oxidative phosphorylation is tightly controlled by transcriptional regulation at the level of DNA and RNA, by substrate feedback inhibition and by post-translational modifications including phosphorylation and acetylation. Inefficient electron transfer through complexes I-IV causes human disease in part because of loss of energy metabolism but also because insults to the various enzymes, particularly Complexes I, II and III induce production of toxic reactive oxygen species. Diseases thought to involve compromised oxidative phosphorylation include diabetes, Parkinson's disease, Alzheimer's, cancer and the ageing process itself.

Many diverse classes of drugs inhibit oxidative phosphorylation (e.g. ddC an antiviral, chloramphenicol an antibiotic, and rosiglitazone and troglitazone, two anti-diabetes compounds, one in widespread use, the other taken off the market because of unexpected toxicity). Not surprisingly, the ability to monitor the levels of the 5 oxidative phosphorylation complexes needs to be a key part of drug development and drug toxicity studies. However, until now, a suitable multiplex assay did not exist.

EGFR Phosphorylation Profiler Panel

Receptor Tyrosine Kinases (RTKs) are important regulators of numerous cell signaling pathways and have been implicated in various disease states. The phosphorylation of RTKs play a critical role in the signaling cascades that regulate cell proliferation and development. The Epidermal Growth Factor Receptor (EGFR) family of RTKs are structurally related transmembrane glycoproteins that includes EGFR (erbB1), HER2 (erbB2), HER3 and HER4 plays a key role in propagating signals regulating cell proliferation, differentiation, motility, and apoptosis. EGFR is a 175 kDa receptor tyrosine kinase that is activated by the binding of ligands like the epidermal growth factor (EGF). EGF binding induces EGFR autophosphorylation at specific tyrosine residues. These phosphorylation events promote the docking of several SH2 domain-containing adaptor proteins to EGFR. This activates many downstream signaling pathways involved in regulating cell growth and proliferation such as the Ras-mediated Mitogen Activated Protein Kinase (MAPK/Erk) signaling pathway, the phosphatidylinositol 3-kinase (PI3K)/Akt pathway, and the signal transduction and activator of transcription (STAT) pathway. In addition to autophosphorylated tyrosine residues, EGFR contains other phosphorylation sites including phosphothreonine and phosphoserine residues that are involved in cross-talk with other signaling pathways and EGFR down-regulation.

The WideScreen® BeadPlex™ Phospho-EGFR Profiling Panel 9-Plex Complete Assay Kit employs sandwich immunoassay methodology using the xMAP® platform to detect the various phosphorylation levels of the following sites on EGFR:

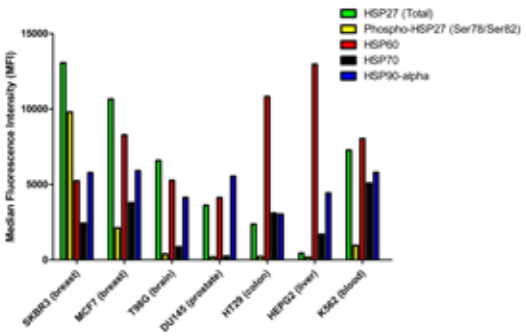
- Phosphorylated Thr654
- Phosphorylated Thr669
- Phosphorylated Tyr845
- Phosphorylated Tyr1045
- Phosphorylated Ser1047
- Phosphorylated Tyr1068
- Phosphorylated Tyr1086
- Phosphorylated Tyr1173
- total EGFR

Profiling the phosphorylation state of EGFR of various cell and tissue types under various conditions allows you to take your research to the next level unlike anything before.

BeadPlex™ Heat Shock Protein Panel

Heat shock proteins (HSPs) are a family of proteins that function as molecular chaperones within the cell, and have many important roles including folding nascent proteins and maintaining proteins in a folded, active state. HSPs can be induced in response to a variety of stresses including heat shock, radiation, and cytotoxic drug exposure, and have increased expression in cancer cells relative to normal cells. A number of these proteins are being investigated as potential targets for cancer therapy, as they can have effects on proliferation, apoptosis, metastasis, and chemotherapy resistance in certain cancers.

To better understand the role of heat shock proteins and the heat shock response in cancer, there is increased interest in simultaneous analysis of key cancer-related heat shock proteins in a panel or multiplex format, rather than studying each protein in isolation. Towards this goal, the Widescreen®



BeadPlex™ HSP Panel is a multiplex assay utilizing Luminex® xMAP® technology that assesses the protein levels of cancer-related heat shock proteins HSP90-alpha, HSP70 (HSP72), HSP60, and HSP27 (Total and phosphorelated Ser^{78}/Ser^{82}) simultaneously in a single sample of cell lysate.

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