



PRODUCT SOLUTIONS FOR BIOLOGICS

Enabling Drug Discovery and Development Programs

Cell-Based Assays to Accelerate Your Biologics Development
from Discovery to QC Lot Release



December 2023

CELL-BASED ASSAYS FOR BIOLOGICS DEVELOPMENT PROGRAMS

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BIOASSAYS FOR BIOLOGICS

Qualified Bioassays for Biosimilars, Biobetters Development Programs

These qualified, off-the-shelf bioassays have been optimized and qualified for a particular drug and can reduce assay development timelines by at least 6 months. The simple, easy-to-use assay protocols deliver results fast, enabling implementation into QC lot release and transfer across sites globally.

INN DRUG NAME	QUALIFIED WITH*	MOLECULAR MOA	ASSAY MEASURES	2-plate Kit	10-plate Kit
Aflibercept	Eylea®	VEGF-Trap	VEGFR2 (KDR) Dimerization	93-0996Y1-00005	93-0996Y1-00006
				Bioassay HS Kit	
				93-0996Y1-00153	93-0996Y1-00154
Bevacizumab	Avastin®	Anti-VEGFA mAb	VEGFR2 (KDR) Dimerization	93-0996Y1-00001	93-0996Y1-00002
				Bioassay HS Kit	
				93-0996Y1-00165	93-0996Y1-00166
Ranibizumab	Lucentis®	Anti-VEGFA mAb	VEGFR2 (KDR) Dimerization	93-0996Y1-00003	93-0996Y1-00004
				Bioassay HS Kit	
				93-0996Y1-00167	93-0996Y1-00168
Adalimumab	Humira®	Anti-TNF α mAb	I κ B Degradation	93-0538B15-00131	93-0538B15-00132
	Rituximab	Cytotoxicity	Direct Target Cell Death	97-1012Y026-00169	97-1012Y026-00170
Anakinra	Kineret®	IL-1RA (Inhibits IL-1R)	IL1R/IL1RAP Dimerization	93-1032Y3-00105	93-1032Y3-00106
Anti-PD-1 / PD-L1 (L2) drugs	Keytruda®	PD-L1-induced PD-1 signaling	SH2 (SHP) Recruitment	93-1104Y19-00117	93-1104Y19-00118
Darbepoetin Alfa	Aranesp®	EPOR agonist	EpoR/EpoR Dimerization	93-0965Y3-00019	93-0965Y3-00020
Epoetin Alfa	Recombinant hEpo	EPOR agonist	EpoR/EpoR Dimerization	93-0965Y3-00017	93-0965Y3-00018
Exenatide	Byetta®	GLP1R agonist	cAMP Accumulation	95-0062Y2-00101	95-0062Y2-00102
Follitropin alfa	Gonal-F	FSHR agonist	cAMP Accumulation	95-0119Y2-00103	95-0119Y2-00104
Insulin	USP Insulin	INSRb agonist	SH2 Recruitment	93-0466Y3-00007	93-0466Y3-00008
Insulin Glargine	USP Insulin	INSRb agonist	SH2 Recruitment	93-0466Y3-00011	93-0466Y3-00012
Insulin Lispro	USP Insulin	INSRb agonist	SH2 Recruitment	93-0466Y3-00009	93-0466Y3-00010
Liraglutide	Victoza®	GLP1R agonist	cAMP Accumulation	95-0062Y2-00099	95-0062Y2-00100
Semaglutide	Ozempic®	GLP1R agonist	cAMP Accumulation	95-0062Y2-00175	95-0062Y2-00176
Panitumumab	Vectibix®	Anti-EGFR mAb	EGFR/ErbB2 Dimerization	93-1051Y3-00093	93-1051Y3-00094
Parathyroid Hormone (PTH)	Recombinant hPTH	PTH agonist	β -Arrestin Recruitment	93-0315Y2-00047	93-0315Y2-00048

INN DRUG NAME	QUALIFIED WITH*	MOLECULAR MOA	ASSAY MEASURES	2-plate Kit	10-plate Kit
Pertuzumab	Perjeta®	Anti-HER2-dimerization mAb	ErbB2/ErbB3 Dimerization	93-1042Y3-00095	93-1042Y3-00096
Sargramostim	Leukine®	Recombinant GM-CSF (CSF2R agonist)	CSF2RB/CSF2RA Dimerization	93-1078Y3-00111	93-1078Y3-00112
Somatotropin, Somatropin	Recombinant hGH	GHR agonist	SH2 Recruitment	93-0756Y3-00023	93-0756Y3-00024
Teriparatide	Forteo®	PTHr agonist	cAMP Accumulation	95-0118Y2-00057	95-0118Y2-00058
Tocilizumab	Actemra®	Anti-receptor (IL-6RA) drug	Ligand-induced receptor Dimerization (IL6RA/IL6ST)	93-1045B3-00109	93-1045B3-00110

*All trademarks are the property of their respective owners.

Target or MOA-based Bioassays for Drug Development

Ready-to-use target- or MOA-based bioassays are optimized with a reference ligand. These assays can be readily implemented in development programs for characterization, potency testing and detection of neutralizing antibodies that use the same mechanism of action or the target.

TARGET	MOLECULAR MOA	ASSAY MEASURES	2-plate Kit	10-plate Kit
AGTR1	AGTR1 Agonists	β -Arrestin Recruitment	93-0312Y2-00125	93-0312Y2-00126
AGTRL1	AGTRL1 Agonists	β -Arrestin Recruitment	93-0250Y2-00121	93-0250Y2-00122
BDKRB2	BDKRB2 Agonists	β -Arrestin Recruitment	93-0189Y2-00113	93-0189Y2-00114
C5AR1	Anti-ligand (Anti-C5a)	β -Arrestin Recruitment	93-0557Y2-00059	93-0557Y2-00060
CCR2	Antagonist drugs	β -Arrestin Recruitment	93-0192Y2-00061	93-0192Y2-00062
CD19, CD20, CD38	Cytotoxicity	Antibody-Dependent Cellular-Cytotoxicity	97-1009Y025-00171	97-1009Y025-00172
CD19, CD20, CD38	Cytotoxicity	Antibody-Dependent Cellular-Phagocytosis	97-1009Y025-00177	97-1009Y025-00178
CD19, CD20, CD38	Cytotoxicity	Antibody-Dependent Cellular-Phagocytosis	97-1012Y026-00179	97-1012Y026-00180
CNR1	CNR1 Agonists	β -Arrestin Recruitment	93-0959Y2-00119	93-0959Y2-00120
CXCR5	Antagonist drugs	β -Arrestin Recruitment	93-0514Y2-00063	93-0514Y2-00064
EGFR; HER2; B7-H3	Cytotoxicity	Antibody-Dependent Cellular-Cytotoxicity	97-1004Y021-00173	97-1004Y021-00174
Exendin-4	Agonist drugs	β -Arrestin Recruitment	93-0300Y2-00029	93-0300Y2-00030
FGFR4- β -Klotho	Agonist or antagonist drugs	SH2 Recruitment	93-1060Y3-00089	93-1060Y3-00090
GHSR	Agonist drugs	β -Arrestin Recruitment	93-0242Y3-00141	93-0242Y3-00142
GLP1R	Agonist drugs	β -Arrestin Recruitment	93-0300Y2-00027	93-0300Y2-00028
GLP2R	Agonist drugs	β -Arrestin Recruitment	93-0572Y2-00133	93-0572Y2-00134
GPBAR1	Agonist drugs	cAMP Accumulation	95-0049Y2-00139	95-0049Y2-00140
HER2	Cytotoxicity	Antibody-Dependent Cellular-Cytotoxicity	97-1004Y021-00173	97-1004Y021-00174
IGF1R	Agonist drugs	SH2 Recruitment	93-0505Y1-00069	93-0505Y1-00070
IL2R β /IL2R γ	Dimerization	Ligand-induced receptor Dimerization IL2R β /IL2R γ	93-0998Y3-00183	93-0998Y3-00184 (with ligand) 93-0998Y3-00188 (without ligand)
IL6R/IL6ST	Anti-ligand (IL-6) or anti-receptor (IL-6RA) drugs	Ligand-induced receptor Dimerization (IL6RA/IL6ST)	93-1045Y3-00043	93-1045Y3-00044
IL1RL1/IL1RAP	IL-1RL1/IL1RAP Antagonists	Ligand-induced receptor (IL1RL1/IL1RAP) Dimerization	93-1067Y13-00079	93-1067Y13-00080
IL10RA/IL10RB	Agonist drugs	Ligand-induced receptor Dimerization (IL10RA/IL10RB)	93-0985Y3-00135	93-0985Y3-00136
IL17RA/IL17RC	Anti-ligand (IL-17A, IL-17F) drugs	Ligand-induced receptor Dimerization (IL17RA/IL17RC)	93-0999Y3-00053	93-0999Y3-00054

TARGET	MOLECULAR MOA	ASSAY MEASURES	2-plate Kit	10-plate Kit
IL2RB/IL2RG/IL2RA	Agonist drugs; anti-IL2 drugs	Ligand-induced receptor hetero-oligomerization (IL2RB/IL2RG/IL2RA)	93-1003Y3-00091	93-1003Y3-00092
IL31RA/OSMRb	Anti-ligand (IL-31); anti-receptor drugs	Ligand-induced receptor Dimerization (IL31RA/OSMRb)	93-1002Y3-00083	93-1002Y3-00084
IL7R/IL2RG	IL-7R/IL-2RG Agonists	Ligand-induced receptor (IL7R/IL2RG) Dimerization	93-0997Y13-00081	93-0997Y13-00082
LHCGR	Agonist drugs	cAMP Accumulation	95-0106Y2-00137	95-0106Y2-00138
MC4R	Agonist drugs; Antagonist drugs	β -Arrestin Recruitment	93-0211Y3-00085	93-0211Y3-00086
MCHR1	Agonist drugs	β -Arrestin Recruitment	93-0940Y3-00149	93-0940Y3-00150
MRGPRX2	Agonist drugs	β -Arrestin Recruitment	93-0309Y2-00143	93-0309Y2-00144
NPY2R	Agonist, antagonist drugs	β -Arrestin Recruitment	93-0212Y2-00065	93-0212Y2-00066
NPY2R	Agonist, antagonist drugs	cAMP Accumulation	95-0077Y2-00055	95-0077Y2-00056
PD-1 (-PD-L1)**	Agonists, antagonist drugs	SH2 Recruitment	93-1104Y19-00117	93-1104Y19-00118
PDGFRA	Antagonist drugs	SH2 Recruitment	93-0823Y3-00071	93-0823Y3-00072
PDGFRB	Antagonist drugs	SH2 Recruitment	93-0493Y3-00073	93-0493Y3-00074
SIRP α (-CD47)	Antagonist drugs	SH2 Recruitment	93-1135Y19-00129	93-1135Y19-00130
SSTR2	Agonist drugs	β -Arrestin Recruitment	93-0181Y2-00067	93-0181Y2-00068
TrkA-p75	Antagonist drugs	SH2 Recruitment	93-0529Y3-00147	93-0529Y3-00148
TrkB-p75	Agonists (PD) or antagonist drugs	SH2 Recruitment	93-0530Y3-00075	93-0530Y3-00076
TrkC	Agonists (PD) or antagonist drugs	SH2 Recruitment	93-0464Y3-00077	93-0464Y3-00078
VIPR2	Agonist drugs	β -Arrestin Recruitment	93-0317Y2-00087	93-0317Y2-00088

Bioassays Available Through Custom Development Service

Other targets available through custom development programs

These bioassays are currently in development and are also available as a custom assay development for customer-defined specifications. To request a custom bioassay for these biologics, email customerservicedrx@eurofinsus.com.

INN DRUG NAME / TARGET/ ASSAY	MOLECULAR MOA	ASSAY MEASURES
A549 IκB Degradation Bioassay	Anti-TNFα mAb	IκB degradation
Denosumab	Anti-RANKL mAb	NF-κB transcriptional reporter
CXCR2 β-Arrestin Bioassay	Agonist drugs	β-Arrestin recruitment
CALCRL-RAMP3 β-Arrestin Bioassay	Agonist drugs	β-Arrestin recruitment
MC1R Bioassay	Agonist drugs	β-Arrestin recruitment
CSF1R/CSF1R Dimerization Bioassay	Antagonist drugs	Ligand-mediated Receptor Dimerization
AXL Functional bioassay	Agonist drugs	SH2 recruitment

SIGNALING PATHWAY REPORTER ASSAYS

The PathHunter Signaling Pathway Reporter Assays are stable clonal cell lines that monitor the activation of specific signaling pathways, utilizing the established PathHunter Enzyme Fragment Complementation (EFC) technology. Each stable cell line is engineered to express a synthetic DNA reporter construct, comprising a pathway-specific transcription factor response element that drives expression of ePL-tagged reporter protein. The activated signaling pathway induces expression of the ePL-tagged reporter protein, which is measured by addition of the detection reagent containing EA, resulting in complementation of the two enzyme fragments, and production of an active enzyme that hydrolyzes the substrate to generate a chemiluminescent signal.

PATHWAY	TARGET	DESCRIPTION	PART NUMBER
	IL-7	PathHunter® IL-7 Signaling Reporter Cell Line (REH)	93-1173C055
	BCMA	PathHunter® BCMA Signaling Reporter Cell Line (K562)	93-1183C042
	TSLP	PathHunter® TSLP Signaling Reporter Cell Line (REH)	93-1182C055
	IL-3	PathHunter® IL-3 Signaling Reporter Cell Line (U937)	93-1181C054
	IL-2	PathHunter® IL-2 Signaling Reporter Cell Line (REH)	93-1180C055
	IL-15	PathHunter® IL-15 Signaling Reporter Cell Line (REH)	93-1178C055
NFAT	-	PathHunter® Jurkat NFAT Pathway Reporter Cell Line	93-1141C19
NF-kB	-	PathHunter® U2OS NF-kB Pathway Reporter Cell Line	93-1157C3
NF-kB	CD27	PathHunter® HEK 293 CD27 NF-kB Signaling Pathway Reporter Cell Line	93-1166C1
NF-kB	RANK	PathHunter® U2OS RANK NF-kB Signaling Pathway Reporter Cell Line	93-1156C3
NF-kB		PathHunter® NF-kB Pathway Reporter Cell Line (HEK293)	93-1164C1
IL18R1		PathHunter® IL-18 Signaling Reporter Cell Line (U2OS)	93-1172C3
IFN γ		PathHunter® IFN γ Signaling Reporter Cell Line (HEK293)	93-1174C1
STAT3	-	PathHunter® HepG2 STAT3 Pathway Reporter Cell Line	93-1144C44
STAT3	IL11R	PathHunter® HepG2 IL11R STAT3 Signaling Pathway Reporter Cell Line	93-1168C044
STAT5		PathHunter® GM-CSF Signaling Reporter Cell Line (U937)	93-1171C054
TREM1-DAP12		PathHunter® TREM1-DAP12 Signaling Reporter Cell Line (Jurkat)	93-1167C19

IMMUNO-ONCOLOGY SOLUTIONS AND CAPABILITIES

PathHunter® Assays for Checkpoint Modulators

These target biology-based assays are stable cell lines qualified with commercially available reference ligands.

Checkpoints Signaling Cell Lines

TARGET	DESCRIPTION	PART NUMBER
BTLA	Jurkat BTLA Signaling Cell Line	93-1112C19
CD137	U2OS CD137 Signaling Cell Line	93-1089C3
CD200R	Jurkat CD200R Signaling Cell Line	93-1136C19; 93-1176C19 IMPROVED
CD28	Jurkat CD28 Signaling Cell Line	93-1126C19
CTLA4	Jurkat CTLA4 Signaling Cell Line	93-1094C19
ICOS	Jurkat ICOS Signaling Cell Line	93-1127C19
LAIR1	Jurkat LAIR1 Signaling Cell Line	93-1170C19
mCTLA4	Jurkat mCTLA4 Signaling Cell Line	93-1161C19
mPD-1	Jurkat mPD-1 Signaling Cell Line	93-1158C19
NIK	U2OS NIK Signaling Cell Line	93-1059C3
OX40	U2OS OX40 Signaling Cell Line	93-1080C3
PD-1 (SHP1)*	Jurkat PD-1 (SHP1) Signaling Cell Line	93-1104C19
PD-1 (SHP2)	Jurkat PD-1 (SHP2) Signaling Cell Line	93-1106C19
SIRPα (SHP1)*	Jurkat SIRPα (SHP1) Signaling Cell Line	93-1135C19

* These signaling assays are also available in ready-to-use co-culture Bioassay format. Refer to the Bioassays section for details.

Checkpoints Ligand-Presenting Cell Lines

TARGET	DESCRIPTION	PART NUMBER
CD200	U2OS CD200 Ligand Cell Line	93-1137C3; 93-1177C19 IMPROVED
CD86 Ligand	U2OS CD86 Ligand Cell Line	93-1093C3
HVEM Ligand	U2OS HVEM Ligand Cell Line	93-1185C3
mCD80	U2OS mCD80 Ligand Cell Line	93-1162C3
mPD-L1	U2OS mPD-L1 Ligand Cell Line	93-1159C3
PD-L1	U2OS PD-L1 Ligand Cell Line	93-1066C3
PD-L2	U2OS PD-L2 Ligand Cell Line	93-1076C3
CD47	Jurkat CD47-Presenting Cell Line	93-1149C19

Checkpoints Clustering Cell Lines

TARGET	DESCRIPTION	PART NUMBER
FcγRIIb	U2OS FcγRIIb Clustering Cell Line	93-1133C3
FcγR1A	U2OS FcγR1A Clustering Cell Line	93-1138C3
FcγRIIa	U2OS FcγRIIa Clustering Cell Line	93-1140C3
mFcγR2b	U2OS mFcγR2b Clustering Cell Line	93-1139C3

Checkpoints Dimerization Cell Lines

TARGET	DESCRIPTION	PART NUMBER
PD-1/PD-1	U2OS PD-1/PD-1 Dimerization Cell Line	93-1129C3
TIM3/TIM3*	U2OS TIM3/TIM3 Dimerization Cell Line	93-1082C3
VISTA/VISTA*	U2OS VISTA/VISTA Dimerization Cell Line	93-1079C3

*These targets are also available as ready-to-use eXpress (research use only) format in 2- & 10-Plate kit sizes

Checkpoints Internalization Cell Lines

TARGET	DESCRIPTION	PART NUMBER
BCMA	U2OS BCMA Internalization Cell Line	93-1145C3
CD33	U2OS CD33 Internalization Cell Line	93-1148C3
Siglec9	U2OS Siglec9 Internalization Cell Line	93-1147C3

Early Access Checkpoints Cell Lines

The early access cell lines are available for the customer to further develop the assay with their molecules. No standard or drug is currently available for these cell lines to be fully qualified and released as full products.

TARGET	DESCRIPTION	PART NUMBER
PD-1/CD28	PD-1/CD28 Receptor Dimerization Cell Line	83-0026C3
PD-1/CEACAM1	PD-1/CEACAM1 Receptor Dimerization Cell Pool	83-0015C3
PD-1/CTLA4	PD-1/CTLA4 Receptor Dimerization Cell Line	83-0010C3
PD-1/LAG3	PD-1/LAG3 Receptor Dimerization Cell Line	83-0009C3
PD-1/PD-L1	PD-1/PD-L1 Receptor Dimerization Cell Line	83-0013C3
PD-1/TIGIT	PD-1/TIGIT Receptor Dimerization Cell Line	83-0011C3
PD-L1/CTLA4	PD-L1/CTLA4 Receptor Dimerization Cell Line	83-0014C3
PD-L1/TIM3	PD-L1/TIM3 Receptor Dimerization Cell Line	83-0012C3
PD-L1/CTLA4	PD-L1/CTLA4 Receptor Dimerization Cell Line	83-0014C3
mPD-1/mLAG3	mPD-1/mLAG3 Receptor Dimerization Cell Line	83-0017C3

mPD-1/mTIGIT	mPD-1/mTIGIT Receptor Dimerization Cell Line	83-0018C3
mPD-1/mCTLA4	mPD-1/mCTLA4 Receptor Dimerization Cell Line	83-0019C3
TIGIT/LAG3	TIGIT/LAG3 Receptor Dimerization Cell Line	83-0024C3
TIM3/CEACAM1	TIM3/CEACAM1 Receptor Dimerization Cell Pool	83-0016C3

To request access to these cell lines, please email [Custom Assay Development](#) team.

KILR[®] CYTOTOXICITY ASSAY

Use KILR Effector Cells and KILR Bioassay Kits in any ADCC assay to measure target cell death. Use KILR cell lines to measure cell Use available KILR cell lines or make your own stable KILR cell lines with retroviral particles that can transduce almost any cell line.

KILR CD16 Effector Cells

DESCRIPTION	PART NUMBER
CD16 Effector Cells, 1 Vial	97-0007-01
CD16 Effector Cells, 5 Vials	97-0007-05

KILR Ready-to-use Bioassay Kits for ADCC Application

Bioassay Kit Name	Cancer Cell Type	Antigen(s)	Drug tested	2-plate Kit	10-plate Kit
KILR Daudi ADCC Bioassay Kit	Burkitt's lymphoma	CD19; CD20; CD38	Rituximab	97-1009Y025-00171	97-1009Y025-00172
KILR NCI-N87 ADCC Bioassay Kit	Gastric cancer	EGFR; HER2; B7-H3	Trastuzumab	97-1004Y021-00173	97-1004Y021-00174
KILR Raji ADCC Bioassay Kit	Burkitt's lymphoma	CD19, CD20, CD38	Rituximab	97-1012Y026-00169	97-1012Y026-00170

KILR Ready-to-use Bioassay Kits for ADCP Application

Bioassay Kit Name	Cancer Cell Type	Antigen(s)	Drug tested	2-plate Kit	10-plate Kit
KILR Daudi ADCP Bioassay Kit	Burkitt's lymphoma	CD19; CD20; CD38	Rituximab	97-1009Y025-00177	97-1009Y025-00178
KILR Raji ADCP Bioassay Kit	Burkitt's lymphoma	CD19, CD20, CD38	Rituximab	97-1012Y026-00179	97-1012Y026-00180

KILR Target Models: Stable Cell Lines

Cell Line	Cancer Cell Type	Antigen(s)	Drug tested	Part Number
ARH77	B-lymphoblast (Leukemia)	CD20	Rituximab	97-1001C017
Jurkat	T lymphocyte	LAG-3	--	97-1038C019
Jurkat	T lymphocyte	PD-1	--	97-1037C019
Jurkat	T lymphocyte	TIM3	--	97-1046C019
U2OS	Osteosarcoma	PD-L2	--	97-1036C003
U2OS	Osteosarcoma	EGFR	Cetuximab	97-1010C003
U2OS	Osteosarcoma	PD-L1	--	97-1029C003

KILR Target Models: Stable Cell Pools

Cell Line	Cancer Cell Type	Antigen(s)	Drug tested	Part Number
4T1	Mouse mammary gland carcinoma	--	--	97-1028P041

A-498	Renal cell carcinoma (kidney)	EGFR	Cetuximab	97-1021P034
A549	Lung cancer	EGFR	Cetuximab	97-1005P015
BT-474	Mammary ductal carcinoma	HER2; HER3	Trastuzumab	97-1042P049
CCRF-CEM	T lymphocyte (CCR4+)	CCR4	--	97-1027P040
COLO-205	Colorectal cancer	Gpa33	--	97-1034P045
Daudi	Burkitt lymphoma	CD19; CD20; CD38	Rituximab	97-1009P025
DU-145	Prostate carcinoma	EFGR; HER2	Cetuximab	97-1043P050
EL4	Mouse T lymphocyte line	--	--	97-1019P033
H322	NSCLC	EGFR; B7-H3	Cetuximab	97-1003P020
HCT-116	Colorectal carcinoma	--	--	97-1040P047
HepG2	Hepatocellular carcinoma	Glypican	--	97-1032P044
HL-60	Promyeloblast	CD33, CD38	Gemtuzumab	97-1039P046
HT1080	Fibrosarcoma	NY-ESO-1 (CTAG1A)	--	97-1031P043
Hut78	Cutaneous T lymphocyte	GITR; CD30	--	97-1024P037
Jurkat	T lymphocyte	--	--	97-1020P019
K562	Bone Marrow; Chronic Myelogenous Leukemia (CML)	--	--	97-1030P042
MCF7	Breast adenocarcinoma	HER2	Trastuzumab	97-1014P028
MDA-MB-231	Breast cancer	CD73; PD-L1; B7-H3	--	97-1023P036
MM-1R	Multiple myeloma	BCMA	--	97-1045P052
MOLT-4	T-lymphoblast (Acute Lymphoblastic Leukemia)	CD3; CD38	--	97-1015P029
NCI-H292	NSCLC (Squamous)	EGFR	Cetuximab	97-1008P024
NCI-N87	Gastric cancer	EGFR; HER2; B7-H3	Trastuzumab	97-1004P021
PANC-1	Pancreatic cancer	EGFR	Cetuximab	97-1044P051
Raji	Burkitt's lymphoma	CD19; CD20; CD38	Rituximab	97-1012P026
Ramos	Burkitt's lymphoma	CD19; CD20	Rituximab	97-1006P022
RPMI 8226	B lymphocyte	GITR; BCMA	--	97-1026P039
SKBR3	Breast adenocarcinoma	--	Trastuzumab	97-1002P018
SK-MEL-28	Melanoma	CD73	--	97-1017P031
SK-MEL-5	Melanoma	CD73	--	97-1033P030
SKOV3	Ovarian adenocarcinoma	HER2; PD-L1	Trastuzumab	97-1007P023
SR	Lymphoblast	CD25; CD30	--	97-1047P053
T2 (174 x CEM.T2)	Lymphoblast	--	--	97-1025P038
THP-1	AML	CD33	--	97-1011P014
U118-MG	Glioblastoma	CD73	--	97-1018P032
WIL2-S	B lymphoblast (hereditary spherocytosis)	CD20	Rituximab	97-1013P027

ASSAYS FOR INTERLEUKINS/CYTOKINES RECEPTORS

Ligand-induced receptor dimerization is an early functional step in receptor activation representing the most proximal, functional readout for activity of drugs targeting cytokine receptors. The PathHunter[®] Cytokine Receptor Assays are ready-to use homogeneous cell-based assays for monitoring and measuring receptor activation through cell-surface receptor-receptor interactions. These assays use a simple add-and-read protocol to generate rapid, reproducible, results in less than 24 hours.

LIGAND	ASSAY MECHANISM	CELL LINE	BIOASSAY KIT (2-plate, 10-plate)	EXPRESS KIT (M: 2-Plate, L: 10-Plate)	LIGAND SYNONYMS
CLCF1	-	Contact Us	-	-	CLCF1; BSF-3; BSF3; CISS2; CLC; NNT-1; NNT1; NR6
CNTF	-	Contact Us	-	-	CNTF; HCNTF
CTF1	-	Contact Us	-	-	CTF1
G-CSF	SH2 Recruitment	93-0809C3	-	93-0809E3CP16M 93-0809E3CP16L	CSF3; G-CSF; GCSF
GM-CSF	CSFR2A / CSFR2B	93-1078C3	-	-	CSF2; GMCSF
IL-1 α	I κ B degradation	93-0538C15	-	-	IL1A; IL-1A; IL1; IL1-ALPHA; IL1F1
IL-1 α	IL-1R1 / IL-1RAP	93-1032C3	93-1032Y3-00105 93-1032Y3-00106	93-1032E3CP5M 93-1032E3CP5L	IL1A; IL-1A; IL1; IL1-ALPHA; IL1F1
IL-1 β	I κ B degradation	93-0538C15	-	-	IL1B; IL-1; IL1-BETA; IL1F2
IL-1F10	-	Contact Us	-	-	IL1F10; FIL1-theta; IL-1HY2; IL-38; IL1-theta; IL1HY2
IL-1RN	I κ B degradation	93-0538C15	-	-	IL1RN; DIRA; ICIL-1RA; IL-1RN; IL-1ra; IL-1ra3; IL1F3; IL1RA; IRAP; MVCD4
IL-1RN	IL-1R1 / IL-1RAP	93-1032C3	93-1032Y3-00105 93-1032Y3-00106	93-1032E3CP5M 93-1032E3CP5L	IL1RN; DIRA; ICIL-1RA; IL-1RN; IL-1ra; IL-1ra3; IL1F3; IL1RA; IRAP; MVCD4
IL-2	IL-2RB / IL-2RG	93-0998C3	-	93-0998E3CP5M 93-0998E3CP5L	IL2; IL-2; TCGF; lymphokine
IL-2	IL-2RB / IL-2RG / IL-2RA	93-1003C3	93-1003Y3-00091 93-1003Y3-00092	93-1003E3CP0M 93-1003E3CP0L	IL2; IL-2; TCGF; lymphokine
IL-3	IL-3R / CD131 (CSF2RB)	93-0969C1	-	-	IL3; IL-3; CD131; CD-131
IL-4	IL-4R / IL-2RG	93-0988C3	-	93-0988E3CP5M 93-0988E3CP5L	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-4	IL-4R / IL-13R	93-1000C3	-	93-1000E3CP5M 93-1000E3CP5L	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-4	IL-4R / IL-13R	93-1001C1	-	93-1001E1CP0M 93-1001E1CP0L	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-5	IL-5R / CSF2RB	93-0972C3	-	93-0972E3CP0M 93-0972E3CP0L	IL5; EDF; IL-5; TRF
IL-6	IL-6RA / IL-6ST	93-1045C3	93-1045Y3-00043 93-1045Y3-00044	93-1045E3CP5M 93-1045E3CP5L	IL6; BSF2; HGF; HSF; IFNB2; IL-6
IL-7	IL-7R / IL-2RG	93-0997C13	93-0997Y13-00081 93-0997Y13-00082	93-0997E13CP0M 93-0997E13CP0L	IL7; IL-7

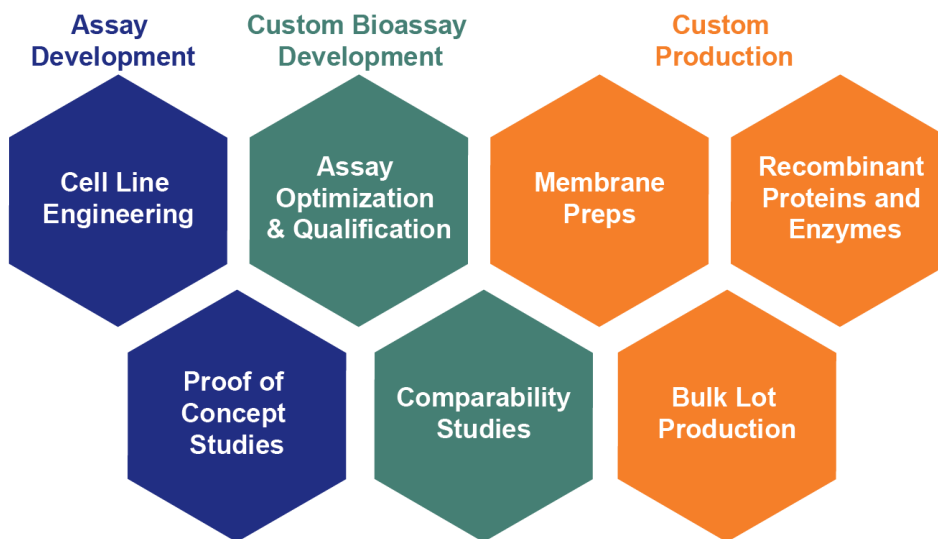
LIGAND	ASSAY MECHANISM	CELL LINE	BIOASSAY KIT (2-plate, 10-plate)	EXPRESS KIT (M: 2-Plate, L: 10-Plate)	LIGAND SYNONYMS
IL-8	CXCR2	93-0202C2	-	93-0202E2CP2M 93-0202E2CP2L	CXCL8; GCP-1; GCP1; IL8; LECT; LUCT; LYNAP; MDNCF; MONAP; NAF; NAP-1; NAP1
IL-8	CXCR1	93-0226C3	-	93-0226E3CP0M 93-0226E3CP0L	CXCL8; GCP-1; GCP1; IL8; LECT; LUCT; LYNAP; MDNCF; MONAP; NAF; NAP-1; NAP1
IL-9	IL-9R / IL-2RG	93-1036C1	-	-	IL9; HP40; IL-9; P40
IL-10	IL-10RA / IL-10RB	93-0985C3	93-0985Y3-00135 93-0985Y3-00136	93-0985E3CP0M 93-0985E3CP0L	IL10; CSIF; GVHDS; IL-10; IL10A; TGIF
IL-11	IL-11R / IL-6ST	93-1028C1	-	-	IL11; AGIF; IL-11
IL-11	STAT3 Transcriptional Reporter	93-1168C044	-	-	IL11; IL-11
IL-12	IL-12RB1 / IL-12RB2	93-1041C3	-	93-1041E3CP0M 93-1041E3CP0L	IL12, p70
IL-13	IL-4R / IL-13R	93-1000C3	-	93-1000E3CP5M 93-1000E3CP5L	IL13; IL-13; P600
IL-13	IL-4R / IL-13R	93-1001C1	-	93-1001E1CP0M 93-1001E1CP0L	IL13; IL-13; P600
IL-14	-	Contact Us	-	-	TXLNA; IL14; TXLN
IL-15	IL-2RB / IL-2RG	93-0998C3	-	93-0998E3CP5M 93-0998E3CP5L	IL15; IL-15
IL-15	-	Contact Us	-	-	IL15; IL-15
IL-16	-	Contact Us	-	-	IL16; LCF; NIL16; PRIL16; prIL-16
IL-17A	IL-17RA / IL-17RC	93-0999C3	93-0999Y3-00053 93-0999Y3-00054	93-0999E3CP0M 93-0999E3CP0L	IL17A; CTLA8; IL-17; IL-17A; IL17
IL-17A	IL-17RA / IL-17RC	93-0931C1	-	93-0931E1CP7M 93-0931E1CP7L	IL17A; CTLA8; IL-17; IL-17A; IL17
IL-17B	-	Contact Us	-	-	-
IL-17C	-	Contact Us	-	-	-
TNF α	IL-17RD / TNFR2	93-1068C3	-	93-1068E3CP5M 93-1068E3CP5L	TNF α
IL-17E	IL-17RA / IL-17RB	93-1105C3	-	-	IL25; IL17E
IL-17F	IL-17RA / IL-17RC	93-0999C3	-	93-0999E3CP0M 93-0999E3CP0L	IL-17F
IL-18	IL-181R / IL-18RAcP	93-1131C3	-	-	IL18; IGIF; IL-18; IL-1g; IL1F4
IL-20	IL-20RA / IL-20RB	93-1027C3	-	93-1027E3CP0M 93-1027E3CP0L	IL20; IL-20; IL10D; ZCYTO10
IL-20	IL-22R / IL-20RB	Contact Us	-	-	IL20; IL-20; IL10D; ZCYTO10
IL-21	IL-21R / IL-2RG	93-1035C3	-	93-1035E3CP0M 93-1035E3CP0L	IL21; CVID11; IL-21; Za11
IL-22	IL-22R / IL-10RB	93-1026C1	-	93-1026E1CP7M 93-1026E1CP7L	IL22; IL-21; IL-22; IL-D110; IL-TIF; ILTIF; TIFIL-23; TIFa; zcyto18
IL-23	IL-23R / IL-12RB1	93-1007C3	-	93-1007E3CP0M 93-1007E3CP0L	IL23A; IL-23; IL-23A; IL23P19; P19; SGRF

LIGAND	ASSAY MECHANISM	CELL LINE	BIOASSAY KIT (2-plate, 10-plate)	EXPRESS KIT (M: 2-Plate, L: 10-Plate)	LIGAND SYNONYMS
IL-24	IL-20RA/ IL-20RB	93-1027C3	-	-	IL24; C49A; FISP; IL10B; MDA7; MOB5; ST16
IL-24	IL-22R / IL-20RB	Contact Us	-	-	IL24; C49A; FISP; IL10B; MDA7; MOB5; ST16
IL-26	IL-20RA/ IL-10RB	93-1020C3	-	93-1020E3CP0M 93-1020E3CP0L	IL26; AK155; IL-26
IL-27	IL27RA / IL6ST	93-1119C3	-	-	IL30, p28
IL-28A	IFNLR1 / IL-10RB	93-0993C3	-	93-0993E3CP5M 93-0993E3CP5L	IL28A, IFNL2
IL-28B	IFNLR1 / IL-10RB	93-0993C3	-	93-0993E3CP5M 93-0993E3CP5L	IL28B, IFNL3
IL-29	IFNLR1 / IL-10RB	93-0993C3	-	93-0993E3CP5M 93-0993E3CP5L	IFNL1; IL-29; IL29
IL-31	OSMRb / IL-31RA	93-1002C3	93-1002Y3-00083 93-1002Y3-00084	93-1002E3CP5M 93-1002E3CP5L	IL31; IL-31
IL-32	-	Contact Us	-	-	IL32; IL-32alpha; IL-32beta; IL-32delta; IL-32gamma; NK4; TAIF; TAIFa; TAIFb; TAIFc; TAIFd
IL-33	IL1RL1 (ST2) / IL-1RAP	93-1067C3	93-1067Y3-00079 93-1067Y3-00080	93-1067E3CP5M 93-1067E3CP5L	IL33; C9orf26; DV527; IL1F11; NFHEV; NFEHEV; RP11-575C20.2
IL-34	CSF1R / CSF1R	93-1061C3	-	-	IL34; C16orf77; IL-34
IL-35	IL-12RB2 / IL-6ST	Contact Us	-	-	IL-35
IL-36A	IL1RL2 / IL1RAP	Contact Us	-	-	IL36A; FIL1; FIL1(EPSILON); FIL1E; IL-1F6; IL1(EPSILON); IL1F6
IL-36B	IL1RL2 / IL1RAP	Contact Us	-	-	IL36B; FIL1; FIL1-(ETA); FIL1H; FILI-(ETA); IL-1F8; IL-1H2; IL1-ETA; IL1F8; IL1H2
IL-36C	IL1RL2 / IL1RAP	Contact Us	-	-	IL36G; IL-1F9; IL-1H1; IL-1RP2; IL1E; IL1F9; IL1H1; IL1RP2
IL-36RN	IL1RL2 / IL1RAP	Contact Us	-	-	IL-36RA; IL36RA
IL-37	IL18R / SIGIRR	Contact Us	-	-	IL37; FIL1; FIL1(ZETA); FIL1Z; IL-1F7; IL-1H; IL-1H4; IL-1RP1; IL-37; IL1F7; IL1H4; IL1RP1
LIF	IL6ST / LIFR	Contact Us	-	-	LIF; CDF; DIA; HILDA; MLPLI
NP	-	Contact Us	-	-	Neuropoietin
M-CSF	CSF1R / CSF1R	93-1061C3	-	-	CSF1; CSF-1; MCSF
OSM	OSMR/ IL-6ST	93-1056C3	-	-	OSM; MGC20461
TSLP	IL-7R / TSLP-R	93-1019C13	-	93-1019E13CP25M 93-1019E13CP25L	TSLP

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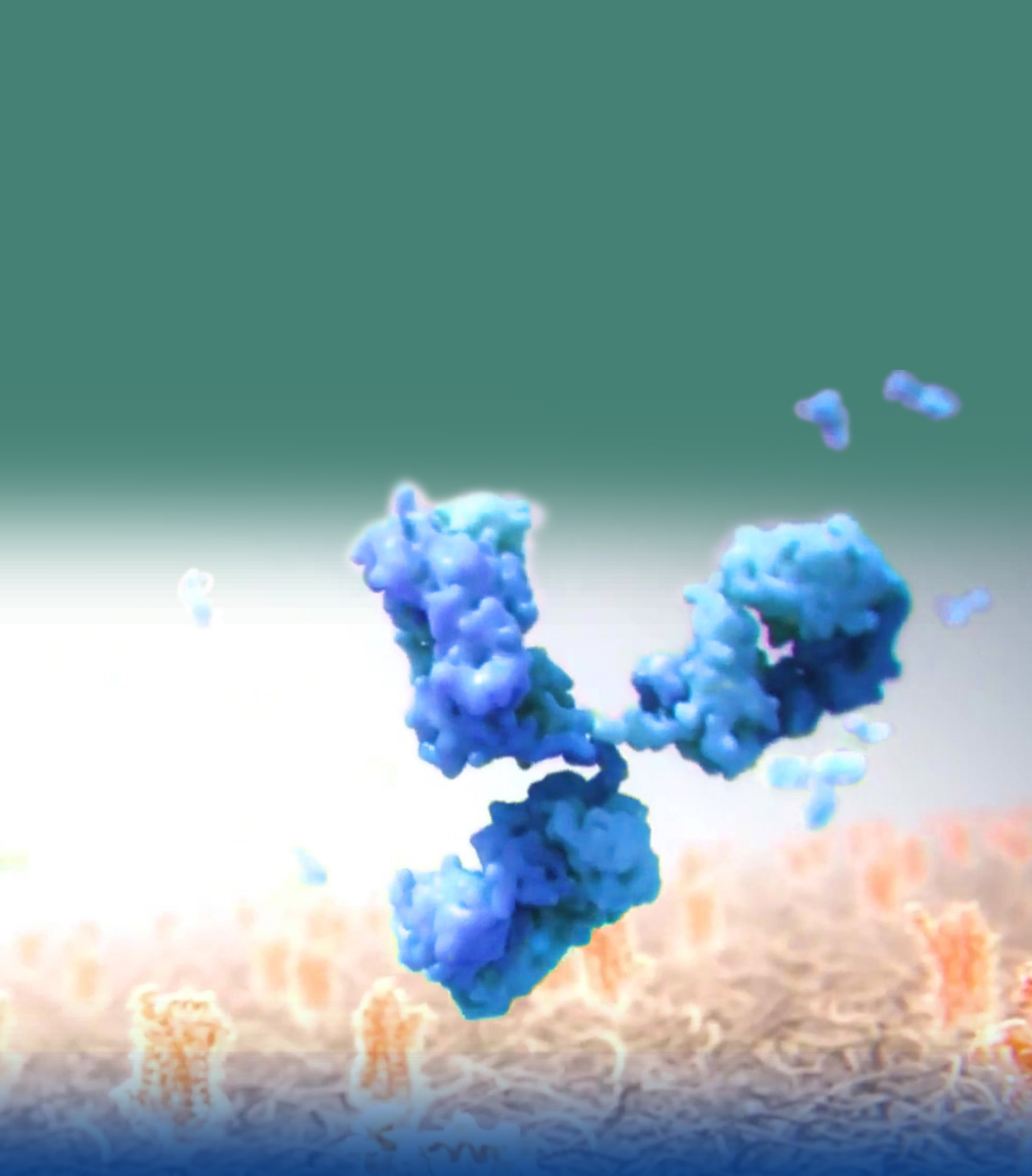
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 Decades of cell-based assay development, cell line engineering, and recombinant enzyme development expertise.
- Cell Line Engineering Capability**
 Exogenous expression approaches (constitutive vs inducible) or gene editing (e.g. KO/KI with CRISPR/Cas9)
- Collaborative**
 Consultative assay development with regular updates through a dedicated project manager
- Complete Solution**
 Customized assay development with screening and profiling services within the same team

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