



# PRODUCT SOLUTIONS FOR BIOLOGICS

## Enabling Drug Discovery and Development Programs

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



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

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

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

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

## 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](mailto: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-3	PathHunter® IL-3 Signaling Reporter Cell Line (U937)	<a href="#">93-1181C054</a>
	IL-2	PathHunter® IL-2 Signaling Reporter Cell Line (REH)	<a href="#">93-1180C055</a>
	IL-15	PathHunter® IL-15 Signaling Reporter Cell Line (REH)	<a href="#">93-1178C055</a>
NFAT	-	PathHunter® Jurkat NFAT Pathway Reporter Cell Line	<a href="#">93-1141C19</a>
NF-kB	-	PathHunter® U2OS NF-kB Pathway Reporter Cell Line	<a href="#">93-1157C3</a>
NF-kB	CD27	PathHunter® HEK 293 CD27 NF-kB Signaling Pathway Reporter Cell Line	<a href="#">93-1166C1</a>
NF-kB	RANK	PathHunter® U2OS RANK NF-kB Signaling Pathway Reporter Cell Line	<a href="#">93-1156C3</a>
NF-kB		PathHunter® NF-kB Pathway Reporter Cell Line (HEK293)	93-1164C1
IL18R1		PathHunter® IL-18 Signaling Reporter Cell Line (U2OS)	93-1172C3
IFN $\gamma$		PathHunter® IFN $\gamma$ Signaling Reporter Cell Line (HEK293)	93-1174C1
STAT3	-	PathHunter® HepG2 STAT3 Pathway Reporter Cell Line	<a href="#">93-1144C44</a>
STAT3	IL11R	PathHunter® HepG2 IL11R STAT3 Signaling Pathway Reporter Cell Line	<a href="#">93-1168C044</a>
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	<a href="#">93-1112C19</a>
CD137	U2OS CD137 Signaling Cell Line	<a href="#">93-1089C3</a>
CD200R	Jurkat CD200R Signaling Cell Line	<a href="#">93-1176C19</a>
CD28	Jurkat CD28 Signaling Cell Line	<a href="#">93-1126C19</a>
CTLA4	Jurkat CTLA4 Signaling Cell Line	<a href="#">93-1094C19</a>
ICOS	Jurkat ICOS Signaling Cell Line	<a href="#">93-1127C19</a>
LAIR1	Jurkat LAIR1 Signaling Cell Line	93-1170C19
mCTLA4	Jurkat mCTLA4 Signaling Cell Line	<a href="#">93-1161C19</a>
mPD-1	Jurkat mPD-1 Signaling Cell Line	<a href="#">93-1158C19</a>
NIK	U2OS NIK Signaling Cell Line	<a href="#">93-1059C3</a>
OX40	U2OS OX40 Signaling Cell Line	<a href="#">93-1080C3</a>
PD-1 (SHP1)*	Jurkat PD-1 (SHP1) Signaling Cell Line	<a href="#">93-1104C19</a>
PD-1 (SHP2)	Jurkat PD-1 (SHP2) Signaling Cell Line	<a href="#">93-1106C19</a>
SIRP $\alpha$ (SHP1)*	Jurkat SIRP $\alpha$ (SHP1) Signaling Cell Line	<a href="#">93-1135C19</a>

\* 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	<a href="#">93-1177C19</a>
CD86 Ligand	U2OS CD86 Ligand Cell Line	<a href="#">93-1093C3</a>
HVEM Ligand	U2OS HVEM Ligand Cell Line	<a href="#">93-1116C3</a>
mCD80	U2OS mCD80 Ligand Cell Line	<a href="#">93-1162C3</a>
mPD-L1	U2OS mPD-L1 Ligand Cell Line	<a href="#">93-1159C3</a>
PD-L1	U2OS PD-L1 Ligand Cell Line	<a href="#">93-1066C3</a>
PD-L2	U2OS PD-L2 Ligand Cell Line	<a href="#">93-1076C3</a>
CD47	Jurkat CD47-Presenting Cell Line	<a href="#">93-1149C19</a>

## Checkpoints Clustering Cell Lines

TARGET	DESCRIPTION	PART NUMBER
FcγRIIb	U2OS FcγRIIb Clustering Cell Line	<a href="#">93-1133C3</a>
FcγR1A	U2OS FcγR1A Clustering Cell Line	<a href="#">93-1138C3</a>
FcγRIIa	U2OS FcγRIIa Clustering Cell Line	<a href="#">93-1140C3</a>
mFcγR2b	U2OS mFcγR2b Clustering Cell Line	<a href="#">93-1139C3</a>

## Checkpoints Dimerization Cell Lines

TARGET	DESCRIPTION	PART NUMBER
PD-1/PD-1	U2OS PD-1/PD-1 Dimerization Cell Line	<a href="#">93-1129C3</a>
TIM3/TIM3*	U2OS TIM3/TIM3 Dimerization Cell Line	<a href="#">93-1082C3</a>
VISTA/VISTA*	U2OS VISTA/VISTA Dimerization Cell Line	<a href="#">93-1079C3</a>

\*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	<a href="#">93-1145C3</a>
CD33	U2OS CD33 Internalization Cell Line	<a href="#">93-1148C3</a>
Siglec9	U2OS Siglec9 Internalization Cell Line	<a href="#">93-1147C3</a>

## 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<sup>®</sup> 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	<a href="#">97-0007-01</a>
CD16 Effector Cells, 5 Vials	<a href="#">97-0007-05</a>

### 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	<a href="#">97-1009Y025-00171</a>	<a href="#">97-1009Y025-00172</a>
KILR NCI-N87 ADCC Bioassay Kit	Gastric cancer	EGFR; HER2; B7-H3	Trastuzumab	<a href="#">97-1004Y021-00173</a>	<a href="#">97-1004Y021-00174</a>
KILR Raji ADCC Bioassay Kit	Burkitt's lymphoma	CD19, CD20, CD38	Rituximab	<a href="#">97-1012Y026-00169</a>	<a href="#">97-1012Y026-00170</a>

### 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	<a href="#">97-1009Y025-00177</a>	<a href="#">97-1009Y025-00178</a>
KILR Raji ADCP Bioassay Kit	Burkitt's lymphoma	CD19, CD20, CD38	Rituximab	<a href="#">97-1012Y026-00179</a>	<a href="#">97-1012Y026-00180</a>

### KILR Target Models: Stable Cell Lines

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

### KILR Target Models: Stable Cell Pools

Cell Line	Cancer Cell Type	Antigen(s)	Drug tested	Part Number
4T1	Mouse mammary gland carcinoma	--	--	<a href="#">97-1028P041</a>

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

## 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<sup>®</sup> 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	-	<a href="#">Contact Us</a>	-	-	CLCF1; BSF-3; BSF3; CISS2; CLC; NNT-1; NNT1; NR6
CNTF	-	<a href="#">Contact Us</a>	-	-	CNTF; HCNTF
CTF1	-	<a href="#">Contact Us</a>	-	-	CTF1
G-CSF	SH2 Recruitment	<a href="#">93-0809C3</a>	-	<a href="#">93-0809E3CP16M</a> <a href="#">93-0809E3CP16L</a>	CSF3; G-CSF; GCSF
GM-CSF	CSFR2A / CSFR2B	<a href="#">93-1078C3</a>	-	-	CSF2; GMCSF
IL-1 $\alpha$	I $\kappa$ B degradation	<a href="#">93-0538C15</a>	-	-	IL1A; IL-1A; IL1; IL1-ALPHA; IL1F1
IL-1 $\alpha$	IL-1R1 / IL-1RAP	<a href="#">93-1032C3</a>	<a href="#">93-1032Y3-00105</a> <a href="#">93-1032Y3-00106</a>	<a href="#">93-1032E3CP5M</a> <a href="#">93-1032E3CP5L</a>	IL1A; IL-1A; IL1; IL1-ALPHA; IL1F1
IL-1 $\beta$	I $\kappa$ B degradation	<a href="#">93-0538C15</a>	-	-	IL1B; IL-1; IL1-BETA; IL1F2
IL-1F10	-	<a href="#">Contact Us</a>	-	-	IL1F10; FIL1-theta; IL-1HY2; IL-38; IL1-theta; IL1HY2
IL-1RN	I $\kappa$ B degradation	<a href="#">93-0538C15</a>	-	-	IL1RN; DIRA; ICIL-1RA; IL-1RN; IL-1ra; IL-1ra3; IL1F3; IL1RA; IRAP; MVCD4
IL-1RN	IL-1R1 / IL-1RAP	<a href="#">93-1032C3</a>	<a href="#">93-1032Y3-00105</a> <a href="#">93-1032Y3-00106</a>	<a href="#">93-1032E3CP5M</a> <a href="#">93-1032E3CP5L</a>	IL1RN; DIRA; ICIL-1RA; IL-1RN; IL-1ra; IL-1ra3; IL1F3; IL1RA; IRAP; MVCD4
IL-2	IL-2RB / IL-2RG	<a href="#">93-0998C3</a>	-	<a href="#">93-0998E3CP5M</a> <a href="#">93-0998E3CP5L</a>	IL2; IL-2; TCGF; lymphokine
IL-2	IL-2RB / IL-2RG / IL-2RA	<a href="#">93-1003C3</a>	<a href="#">93-1003Y3-00091</a> <a href="#">93-1003Y3-00092</a>	<a href="#">93-1003E3CP0M</a> <a href="#">93-1003E3CP0L</a>	IL2; IL-2; TCGF; lymphokine
IL-3	IL-3R / CD131 (CSF2RB)	<a href="#">93-0969C1</a>	-	-	IL3; IL-3; CD131; CD-131
IL-4	IL-4R / IL-2RG	<a href="#">93-0988C3</a>	-	<a href="#">93-0988E3CP5M</a> <a href="#">93-0988E3CP5L</a>	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-4	IL-4R / IL-13R	<a href="#">93-1000C3</a>	-	<a href="#">93-1000E3CP5M</a> <a href="#">93-1000E3CP5L</a>	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-4	IL-4R / IL-13R	<a href="#">93-1001C1</a>	-	<a href="#">93-1001E1CP0M</a> <a href="#">93-1001E1CP0L</a>	IL4; BCGF-1; BCGF1; BSF-1; BSF1; IL-4
IL-5	IL-5R / CSF2RB	<a href="#">93-0972C3</a>	-	<a href="#">93-0972E3CP0M</a> <a href="#">93-0972E3CP0L</a>	IL5; EDF; IL-5; TRF
IL-6	IL-6RA / IL-6ST	<a href="#">93-1045C3</a>	<a href="#">93-1045Y3-00043</a> <a href="#">93-1045Y3-00044</a>	<a href="#">93-1045E3CP5M</a> <a href="#">93-1045E3CP5L</a>	IL6; BSF2; HGF; HSF; IFNB2; IL-6
IL-7	IL-7R / IL-2RG	<a href="#">93-0997C13</a>	<a href="#">93-0997Y13-00081</a> <a href="#">93-0997Y13-00082</a>	<a href="#">93-0997E13CP0M</a> <a href="#">93-0997E13CP0L</a>	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	<a href="#">93-0202C2</a>	-	<a href="#">93-0202E2CP2M</a> <a href="#">93-0202E2CP2L</a>	CXCL8; GCP-1; GCP1; IL8; LECT; LUCT; LYNAP; MDNCF; MONAP; NAF; NAP-1; NAP1
IL-8	CXCR1	<a href="#">93-0226C3</a>	-	<a href="#">93-0226E3CP0M</a> <a href="#">93-0226E3CP0L</a>	CXCL8; GCP-1; GCP1; IL8; LECT; LUCT; LYNAP; MDNCF; MONAP; NAF; NAP-1; NAP1
IL-9	IL-9R / IL-2RG	<a href="#">93-1036C1</a>	-	-	IL9; HP40; IL-9; P40
IL-10	IL-10RA / IL-10RB	<a href="#">93-0985C3</a>	<a href="#">93-0985Y3-00135</a> <a href="#">93-0985Y3-00136</a>	<a href="#">93-0985E3CP0M</a> <a href="#">93-0985E3CP0L</a>	IL10; CSIF; GVHDS; IL-10; IL10A; TGIF
IL-11	IL-11R / IL-6ST	<a href="#">93-1028C1</a>	-	-	IL11; AGIF; IL-11
IL-11	STAT3 Transcriptional Reporter	<a href="#">93-1168C044</a>	-	-	IL11; IL-11
IL-12	IL-12RB1 / IL-12RB2	<a href="#">93-1041C3</a>	-	<a href="#">93-1041E3CP0M</a> <a href="#">93-1041E3CP0L</a>	IL12, p70
IL-13	IL-4R / IL-13R	<a href="#">93-1000C3</a>	-	<a href="#">93-1000E3CP5M</a> <a href="#">93-1000E3CP5L</a>	IL13; IL-13; P600
IL-13	IL-4R / IL-13R	<a href="#">93-1001C1</a>	-	<a href="#">93-1001E1CP0M</a> <a href="#">93-1001E1CP0L</a>	IL13; IL-13; P600
IL-14	-	<a href="#">Contact Us</a>	-	-	TXLNA; IL14; TXLN
IL-15	IL-2RB / IL-2RG	<a href="#">93-0998C3</a>	-	<a href="#">93-0998E3CP5M</a> <a href="#">93-0998E3CP5L</a>	IL15; IL-15
IL-15	-	<a href="#">Contact Us</a>	-	-	IL15; IL-15
IL-16	-	<a href="#">Contact Us</a>	-	-	IL16; LCF; NIL16; PRIL16; prIL-16
IL-17A	IL-17RA / IL-17RC	<a href="#">93-0999C3</a>	<a href="#">93-0999Y3-00053</a> <a href="#">93-0999Y3-00054</a>	<a href="#">93-0999E3CP0M</a> <a href="#">93-0999E3CP0L</a>	IL17A; CTLA8; IL-17; IL-17A; IL17
IL-17A	IL-17RA / IL-17RC	<a href="#">93-0931C1</a>	-	<a href="#">93-0931E1CP7M</a> <a href="#">93-0931E1CP7L</a>	IL17A; CTLA8; IL-17; IL-17A; IL17
IL-17B	-	<a href="#">Contact Us</a>	-	-	-
IL-17C	-	<a href="#">Contact Us</a>	-	-	-
TNF $\alpha$	IL-17RD / TNFR2	<a href="#">93-1068C3</a>	-	<a href="#">93-1068E3CP5M</a> <a href="#">93-1068E3CP5L</a>	TNF $\alpha$
IL-17E	IL-17RA / IL-17RB	<a href="#">93-1105C3</a>	-	-	IL25; IL17E
IL-17F	IL-17RA / IL-17RC	<a href="#">93-0999C3</a>	-	<a href="#">93-0999E3CP0M</a> <a href="#">93-0999E3CP0L</a>	IL-17F
IL-18	IL-181R / IL-18RAcP	<a href="#">93-1131C3</a>	-	-	IL18; IGIF; IL-18; IL-1g; IL1F4
IL-20	IL-20RA / IL-20RB	<a href="#">93-1027C3</a>	-	<a href="#">93-1027E3CP0M</a> <a href="#">93-1027E3CP0L</a>	IL20; IL-20; IL10D; ZCYTO10
IL-20	IL-22R / IL-20RB	<a href="#">Contact Us</a>	-	-	IL20; IL-20; IL10D; ZCYTO10
IL-21	IL-21R / IL-2RG	<a href="#">93-1035C3</a>	-	<a href="#">93-1035E3CP0M</a> <a href="#">93-1035E3CP0L</a>	IL21; CVID11; IL-21; Za11
IL-22	IL-22R / IL-10RB	<a href="#">93-1026C1</a>	-	<a href="#">93-1026E1CP7M</a> <a href="#">93-1026E1CP7L</a>	IL22; IL-21; IL-22; IL-D110; IL-TIF; ILTIF; TIFIL-23; TIFa; zcyto18
IL-23	IL-23R / IL-12RB1	<a href="#">93-1007C3</a>	-	<a href="#">93-1007E3CP0M</a> <a href="#">93-1007E3CP0L</a>	IL23A; IL-23; IL-23A; IL23P19; P19; SGRF

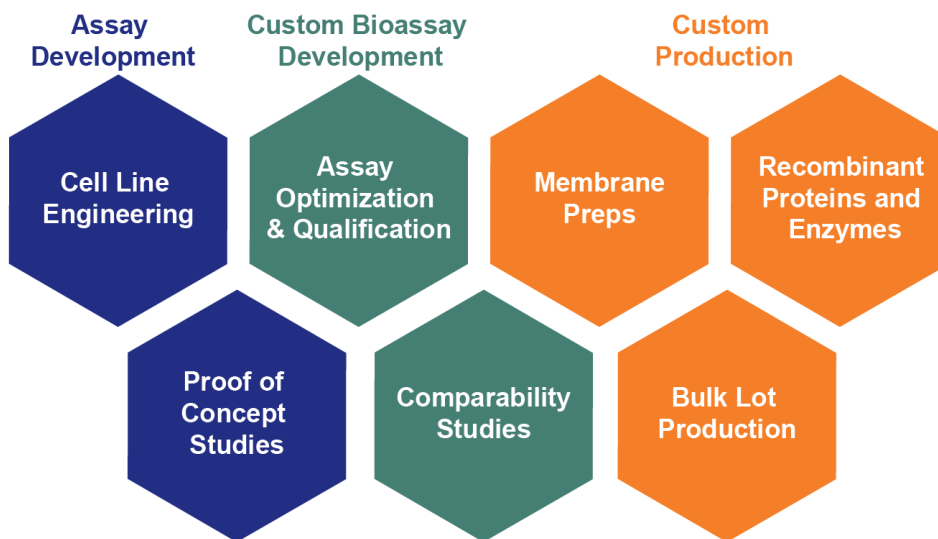


LIGAND	ASSAY MECHANISM	CELL LINE	BIOASSAY KIT (2-plate, 10-plate)	EXPRESS KIT (M: 2-Plate, L: 10-Plate)	LIGAND SYNONYMS
IL-24	IL-20RA/ IL-20RB	<a href="#">93-1027C3</a>	-	-	IL24; C49A; FISP; IL10B; MDA7; MOB5; ST16
IL-24	IL-22R / IL-20RB	<a href="#">Contact Us</a>	-	-	IL24; C49A; FISP; IL10B; MDA7; MOB5;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

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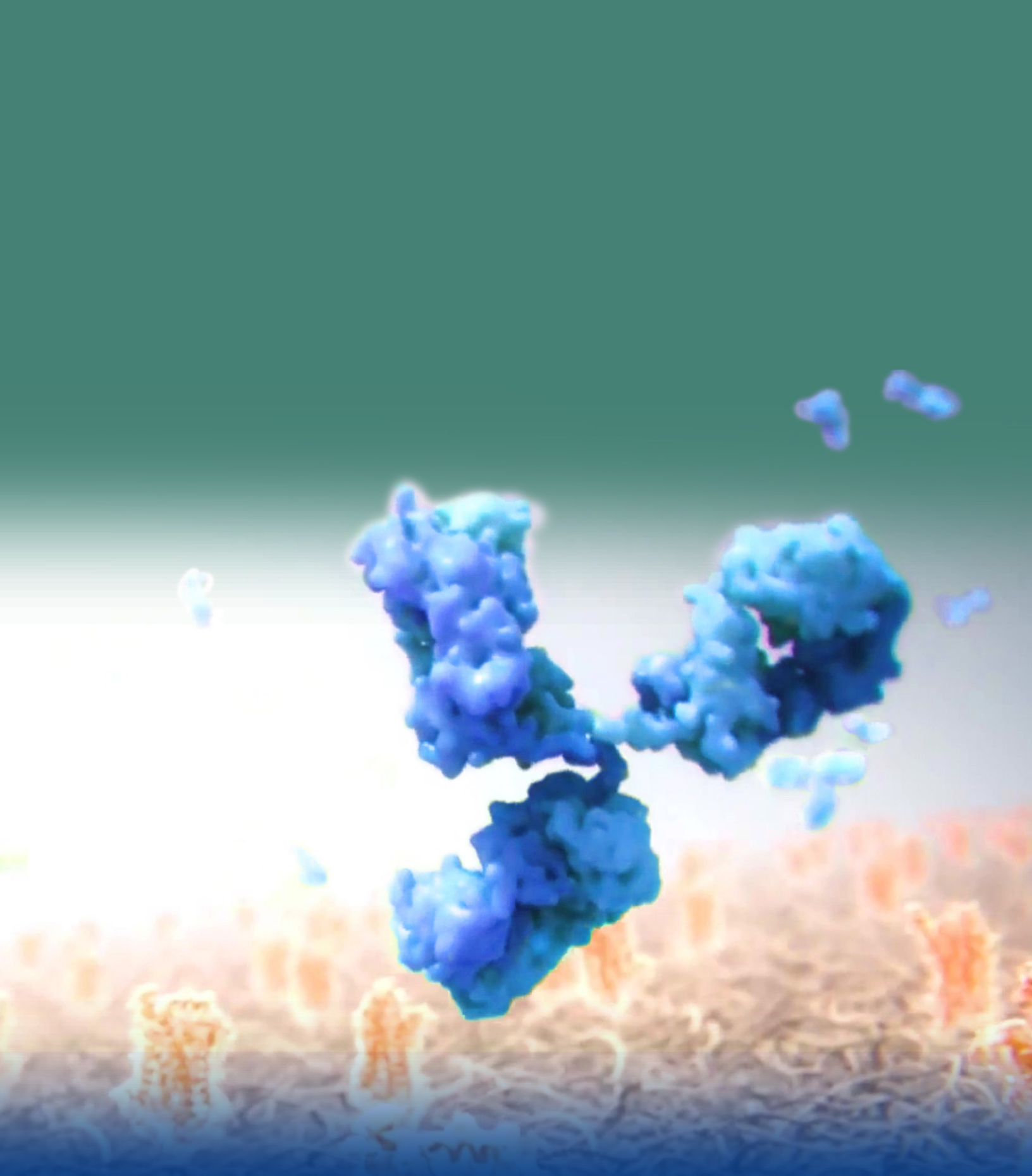
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