



## Engineered cells to study the immune signaling cascades

- ❖ Engineered from HEK293, THP-1, A549, Jurkat cells and more
- ❖ Extensively tested for viability, biological activity, and absence of mycoplasma
- ❖ Compatible with high-throughput screening

InvivoGen offers a large panel of human and mouse reporter cell lines designed to study various signaling pathways. They can be used for the screening of stimulatory or inhibitory molecules or antibodies.

Our cells express one or two inducible reporter genes, both encoding secreted proteins; SEAP (secreted embryonic alkaline phosphatase) and Lucia luciferase. They offer the great benefit of allowing for multiple and non-destructive readings over time.

### A wide range of reporter cells

Transcription factors

PRRs

Inflammasomes

Autophagy

Cytokines

Immune checkpoints

ADCC & ADCP

COVID-19

[WWW.INVIVOGEN.COM/CELL-LINES](http://WWW.INVIVOGEN.COM/CELL-LINES)

# FLEXIBILITY IN STUDYING SIGNALING PATHWAYS

InvivoGen's expanding cell line collection is designed to provide a rapid, sensitive and reliable method to investigate signaling pathways related to innate immunity and more.

## Various cell types

InvivoGen's cell lines derive from immortalized cell lines widely used for *in vitro* biomedical research. They were isolated from various human or mouse tissues, and grow as adherent or suspension cells.

	NAME	CELL TYPE	TISSUE	DISEASE	CULTURE	APPLICATIONS
HUMAN	A549	Epithelial	Lung	Carcinoma	Adherent	Cancer research, toxicology, high throughput screening
	HCT116	Epithelial-like	Colon	Carcinoma	Adherent	Cancer research, drug development
	HEK293	Epithelial	Kidney, embryo	None	Adherent	Toxicology, high throughput screening, bioproduction
	HeLa	Epithelial	Uterus, cervix	Adenocarcinoma	Adherent	Assay development
	HepG2	Epithelial-like	Liver	Carcinoma	Adherent	Cancer research, toxicology, high throughput screening
	HT29	Epithelial	Colon	Adenocarcinoma	Adherent	Cancer research, toxicology, high throughput screening
	Jurkat	T Lymphoblast	Peripheral blood	T cell leukemia	Suspension	Immunology research
	Ramos	B Lymphocyte	-	Burkitt's Lymphoma	Suspension	Immunology research
	THP-1	Monocyte	Peripheral blood	Leukemia	Suspension	Immunology research, toxicology
MOUSE	B16	Epithelial-like	Skin	Melanoma	Adherent	Cancer research, toxicology, high throughput screening
	J774.1	Macrophage	Ascites	Sarcoma	Adherent	Immunology research
	RAW 264.7	Macrophage	Ascites	Leukemia	Adherent	Immunology research

## Inducible expression of one or two reporter genes

Most of our cell lines express an NF- $\kappa$ B-inducible SEAP (secreted embryonic alkaline phosphatase) and/or IRF-inducible Lucia luciferase. Both reporter proteins are secreted and thus can be readily detected in the cell supernatant using the appropriate detection reagent (*see page 11*).

## Thoroughly tested

InvivoGen's cell lines are extensively tested for viability, stability, biological activity, and absence of mycoplasma to ensure strong and reproducible results. Moreover, we provide detailed handling and experimental procedures for all cell lines, to minimize the need for optimization or troubleshooting by the end-user.



## CELL LINE RELATED PRODUCTS

### DETECTION REAGENTS

for SEAP:

- HEK-Blue™ Detection
- QUANTI-Blue™

for Lucia luciferase:

- QUANTI-Luc™ 4 Lucia/Gaussia
- QUANTI-Luc™ 4 Renilla

See page 11



### SELECTIVE ANTIBIOTICS

- Blasticidin
- G418 Sulfate
- Hygromycin B Gold
- Phleomycin
- Puromycin
- Zeocin®

See page 12



### CELL PROTECTION REAGENTS

- Detection of mycoplasma contamination & endotoxins
- Prevention & Elimination of mycoplasma, bacterial & fungal contaminations

See page 12



# TRANSCRIPTION FACTOR REPORTER CELLS

Transcription factor reporter cells comprise a large collection of human and murine cell lines engineered to report the activation of the two major innate immune signaling pathways, NF- $\kappa$ B and IRF, as well as the NFAT pathway. They express the SEAP and/or Lucia luciferase reporter proteins in a transcription factor-dependent manner.

CELL LINE	PRODUCT	PATHWAY	REPORTER	CAT. CODE
<b>NF-<math>\kappa</math>B/IRF REPORTER CELLS</b>				
<b>A549</b> (human)	A549-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	a549d-nfis
<b>B16</b> (mouse)	B16-Blue™ ISG	IRF	SEAP	bb-ifnabg
<b>HCT116</b> (human)	HCT116-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	hctd-nfis
<b>HEK293</b> (human)	293-Dual™ Null	Double readout (IRF / IFN- $\beta$ ), Lucia knocked into IFN- $\beta$	SEAP / Lucia	293d-null
	HEK-Blue™ ISG	IRF	SEAP	hkb-isg
	HEK-Blue-Lucia™ Null	Double readout (NF- $\kappa$ B / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-nullni
	HEK-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	hkd-nfis
<b>HepG2</b> (human)	HepG2-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	hepg2d-nfis
<b>J774</b> (mouse)	J774-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	j774d-nfis
<b>Jurkat</b> (human)	Jurkat-Dual™	NF- $\kappa$ B & IRF	Lucia / SEAP	jktd-isnf
<b>Ramos</b> (human)	Ramos-Blue™	NF- $\kappa$ B / AP-1	SEAP	rms-sp
	Ramos-Blue™ KD-MyD	NF- $\kappa$ B / AP-1, knockdown of MyD88	SEAP	rms-kdmyd
<b>RAW</b> (mouse)	RAW-Blue™	NF- $\kappa$ B / AP-1	SEAP	raw-sp
	RAW-Dual™	IRF & MIP-2 (NF- $\kappa$ B)	SEAP / Lucia	rawd-ismip
	RAW-Lucia™ ISG	IRF	Lucia	rawl-isg
	RAW-Lucia™ ISG-KO-IRF1	IRF, knockout of IRF1	Lucia	rawl-koirf1
	RAW-Lucia™ ISG-KO-IRF3	IRF, knockout of IRF3	Lucia	rawl-koirf3
	RAW-Lucia™ ISG-KO-IRF5	IRF, knockout of IRF5	Lucia	rawl-koirf5
	RAW-Lucia™ ISG-KO-IRF7	IRF, knockout of IRF7	Lucia	rawl-koirf7
	RAW-Lucia™ ISG-KO-TBK1	IRF, knockout of TBK1	Lucia	rawl-kotbk
<b>THP-1</b> (human)	THP1-Blue™ NF- $\kappa$ B	NF- $\kappa$ B	SEAP	thp-nfkb
	THP1-Lucia™ NF- $\kappa$ B	NF- $\kappa$ B	Lucia	thpl-nfkb
	THP1-Blue™ ISG	IRF	SEAP	thp-isg
	THP1-Lucia™ ISG	IRF	Lucia	thpl-isg
	THP1-Dual™	NF- $\kappa$ B & IRF	SEAP / Lucia	thpd-nfis
	THP1-Blue™ KI-IP10	NF- $\kappa$ B & IRF, Lucia knocked into IP10 (CXCL10)	SEAP / Lucia	thpb-ip10kile
	THP1-Dual™ KO-IFNAR2	NF- $\kappa$ B & IRF, knockout of IFNAR2	SEAP / Lucia	thpd-koifnar2
	THP1-Dual™ KO-IKKe	NF- $\kappa$ B & IRF, knockout of IKKe	SEAP / Lucia	thpd-koikke
	THP1-Dual™ KO-IRF1	NF- $\kappa$ B & IRF, knockout of IRF1	SEAP / Lucia	thpd-koirf1
	THP1-Dual™ KO IRF3	NF- $\kappa$ B & IRF, knockout of IRF3	SEAP / Lucia	thpd-koirf3
	THP1-Dual™ KO IRF5	NF- $\kappa$ B & IRF, knockout of IRF5	SEAP / Lucia	thpd-koirf5
	THP1-Dual™ KO IRF7	NF- $\kappa$ B & IRF, knockout of IRF7	SEAP / Lucia	thpd-koirf7
	THP1-Dual™ KO-MyD	NF- $\kappa$ B & IRF, knockout of MyD88	SEAP / Lucia	thpd-komyd
	THP1-Dual™ KO-TBK1	NF- $\kappa$ B & IRF, knockout of TBK1	SEAP / Lucia	thpd-kotbk
	THP1-Dual™ KO-TRIF	NF- $\kappa$ B & IRF, knockout of TRIF	SEAP / Lucia	thpd-kotrif
<b>NFAT REPORTER CELLS</b>				
<b>Jurkat</b> (human)	Jurkat-Lucia™ NFAT	NFAT	Lucia	jknl-nfat
	Jurkat-Lucia™ NFAT-CD28	Human CD28 / NFAT	Lucia	jknl-cd28

In vivoGen offers a wide collection of reporter cell lines for the major families of pattern recognition receptors (PRRs). These cells report the activation of the NF- $\kappa$ B and/or IRF (or AhR) pathways through the secretion of the SEAP and/or Lucia reporters upon stimulation with a PRR cognate agonist.

- Aryl hydrocarbon receptor (AhR)
- Cytosolic sugar sensors (ALPK1 & TIFA)
- C-type lectin receptors (CLRs)
- NOD receptors (NOD1/2)
- Cytosolic DNA sensors (CDSs) & STING
- RIG-I-like receptors (RLRs)
- Toll-like receptors (TLRs)

## AhR reporter cells

CELL LINE	PRODUCT	PATHWAY	REPORTER	CAT. CODE
<b>AhR REPORTER CELLS</b>				
HepG2 (human)	HepG2-Lucia™ AhR	AhR	Lucia	hpgl-ahr
HT29 (human)	HT29-Lucia™ AhR	AhR	Lucia	ht2l-ahr

## ALPK1/TIFA reporter cells

CELL LINE	PRODUCT	PRR KNOCKED OUT / PATHWAY	REPORTER	CAT. CODE
<b>KO-ALPK1 OR KO-TIFA / NF-<math>\kappa</math>B REPORTER CELLS</b>				
HEK293 (human)	HEK-Blue™ KO-ALPK1	Knockout of ALPK1 / NF- $\kappa$ B	SEAP	hkb-koalpk
	HEK-Blue™ KO-TIFA	Knockout of TIFA / NF- $\kappa$ B	SEAP	hkb-kotifa

## CLR reporter cells

CELL LINE	PRODUCT	PRR EXPRESSED / PATHWAY	REPORTER	CAT. CODE
<b>CLR / NF-<math>\kappa</math>B REPORTER CELLS</b>				
HEK293 (human)	HEK-Blue™ hDectin-1a	Human Dectin-1a / NF- $\kappa$ B	SEAP	hkb-hdect1a
	HEK-Blue™ hDectin-1b	Human Dectin-1b / NF- $\kappa$ B	SEAP	hkb-hdect1b
	HEK-Blue™ mDectin-1b	Mouse Dectin-1b / NF- $\kappa$ B	SEAP	hkb-mdect1b
	HEK-Blue™ mDectin-2	Mouse Dectin-2 / NF- $\kappa$ B	SEAP	hkb-mdect2
	HEK-Blue™ hMincle	Human Mincle / NF- $\kappa$ B	SEAP	<i>contact us</i>
	HEK-Blue™ mMincle	Mouse Mincle / NF- $\kappa$ B	SEAP	hkb-mmcl

## NOD reporter cells

CELL LINE	PRODUCT	PRR EXPRESSED / PATHWAY	REPORTER	CAT. CODE
<b>NOD / NF-<math>\kappa</math>B REPORTER CELLS</b>				
HEK293 (human)	HEK-Blue™ hNOD1	Human NOD1 / NF- $\kappa$ B	SEAP	hkb-hnod1
	HEK-Blue™ hNOD2	Human NOD2 / NF- $\kappa$ B	SEAP	hkb-hnod2v2
	HEK-Blue™ mNOD1	Mouse NOD1 / NF- $\kappa$ B	SEAP	hkb-mnod1
	HEK-Blue™ mNOD2	Mouse NOD2 / NF- $\kappa$ B	SEAP	hkb-mnod2

## CDS & STING reporter cells

CELL LINE	PRODUCT	PRR(S) EXPRESSED, KO, OR KI / PATHWAY(S)	REPORTERS	CAT. CODE
<b>KO-CDS / IRF (&amp; NF-κB) REPORTER CELLS</b>				
<b>RAW</b> (mouse)	RAW-Lucia™ ISG-KO-cGAS	Knockout of cGAS / IRF	Lucia	rawl-kocgas
	RAW-Lucia™ ISG-KO-IFI16	Knockout of IFI16 / IRF	Lucia	rawl-koif16
	Raw-lucia™ ISG-KO-TREX1	Knockout of TREX / IRF	Lucia	rawl-kotrex
<b>THP-1</b> (human)	THP1-Dual™ KO-cGAS	Knockout of cGAS / NF-κB & IRF	SEAP / Lucia	thpd-kocgas
	THP1-Dual™ KO-DNase2	Knockout of DNase2 / NF-κB & IRF	SEAP / Lucia	thpd-kodnase2
	THP1-Dual™ KO-IFI16	Knockout of IFI16 / NF-κB & IRF	SEAP / Lucia	thpd-koifi16
	THP1-Dual™ KO-SAMHD1	Knockout of SAMHD1 / NF-κB & IRF	SEAP / Lucia	thpd-kosamhd1
	THP1-Dual™ KO-TREX1	Knockout of TREX1 / NF-κB & IRF	SEAP / Lucia	thpd-kotrex
<b>KO/KI-STING / IRF (&amp; NF-κB) REPORTER CELLS</b>				
<b>B16</b> (mouse)	B16-Blue™ ISG-KO-STING	Knockout of STING / IRF	SEAP	bb-kostg
<b>HEK293</b> (human)	293-Dual™ hSTING-A162	Human S162A STING / double readout (IRF / IFN-β), Lucia knocked into IFN-β	SEAP / Lucia	293d-a162
	293-Dual™ hSTING-H232	Human H232 STING / double readout (IRF / IFN-β), Lucia knocked into IFN-β	SEAP / Lucia	293d-h232
	293-Dual™ hSTING-R232	Human R232 STING / double readout (IRF / IFN-β), Lucia knocked into IFN-β	SEAP / Lucia	293d-r232
	HEK-Blue™ ISG-KO-STING	Knockout of STING / IRF	SEAP	hkb-kostg
	HEK-Blue™ STAT6-hSTING R232	Human R232 STING / STAT6	SEAP	hkb-st6r232
<b>RAW</b> (mouse)	RAW-Lucia™ ISG-KO-STING	Knockout of STING / IRF	Lucia	rawl-kostg
<b>THP-1</b> (human)	THP1-Dual™ KI-hSTING-A162	Knockin of S162A STING / NF-κB & IRF	SEAP / Lucia	thpd-a162
	THP1-Dual™ KI-hSTING-H232	Knockin of H232 STING / NF-κB & IRF	SEAP / Lucia	thpd-h232
	THP1-Dual™ KI-hSTING-M155	Knockin of M155 STING / NF-κB & IRF	SEAP / Lucia	thpd-m155
	THP1-Dual™ KI-hSTING-R232	Knockin of R232 STING / NF-κB & IRF	SEAP / Lucia	thpd-r232
	THP1-Dual™ KI-hSTING-S154	Knockin of S154 STING / NF-κB & IRF	SEAP / Lucia	thpd-s154
	THP1-Dual™ KO-STING	Knockout of STING / NF-κB & IRF	SEAP / Lucia	thpd-kostg

## RLR reporter cells

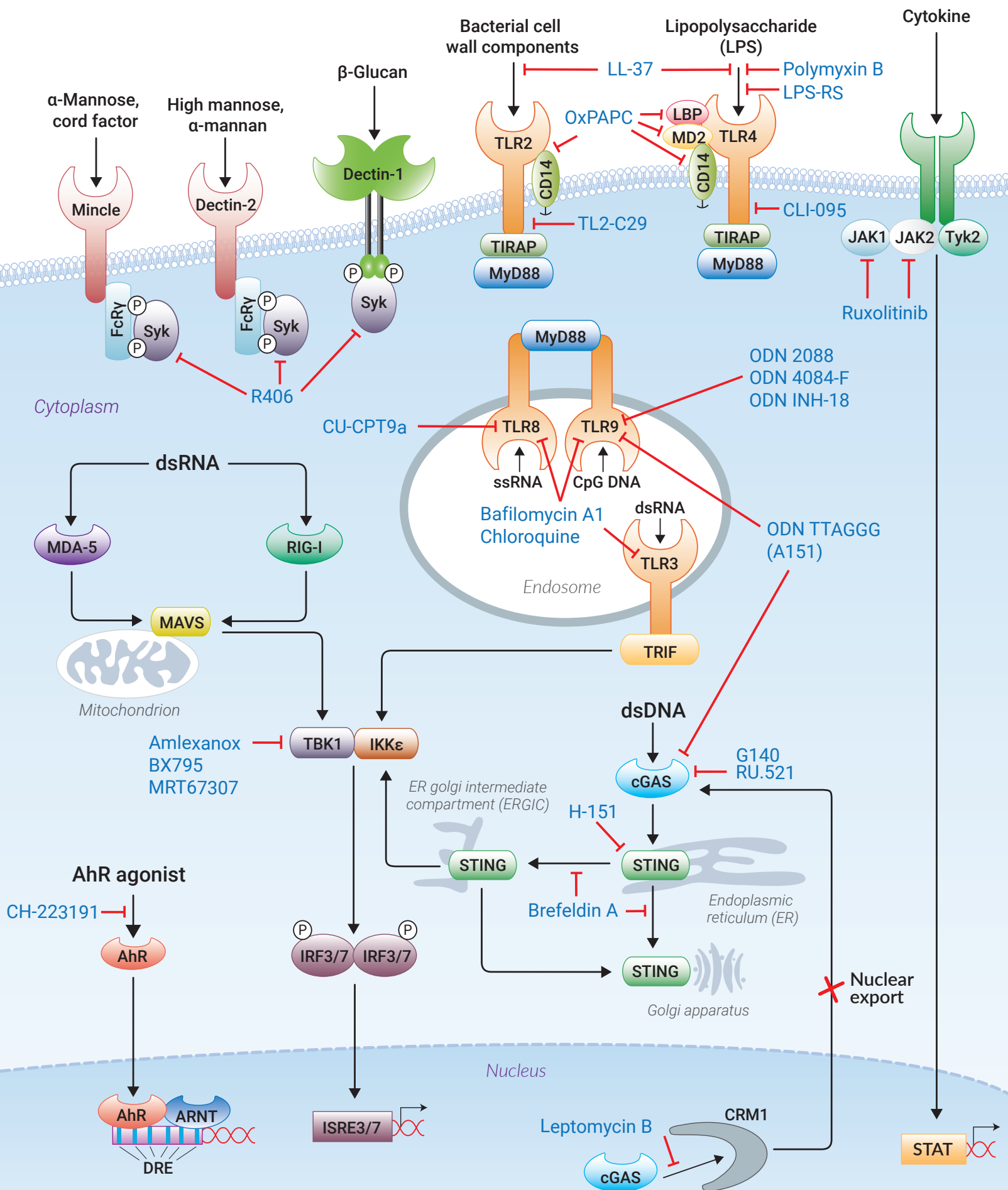
CELL LINE	PRODUCT	PRR(S) EXPRESSED, KO, OR KI / PATHWAY(S)	REPORTERS	CAT. CODE
<b>KO/KI-RLR / IRF (&amp; NF-κB) REPORTER CELLS</b>				
<b>A549</b> (human)	A549-Dual™ KO-MAVS	Knockout of MAVS / NF-κB & IRF	SEAP / Lucia	a549d-komavs
	A549-Dual™ KO-MDA5	Knockout of MDA5 / NF-κB & IRF	SEAP / Lucia	a549d-komda5
	A549-Dual™ KO-RIG-I	Knockout of RIG-I / NF-κB & IRF	SEAP / Lucia	a549d-korigi
<b>HEK293</b> (human)	HEK-Lucia™ RIG-I	Human RIG-I / IRF	Lucia	hkl-hrigi
<b>RAW</b> (mouse)	RAW-Lucia™ ISG-KO-MAVS	Knockout of MAVS / IRF	Lucia	rawl-komavs
	RAW-Lucia™ ISG-KO-MDA5	Knockout of MDA5 / IRF	Lucia	rawl-komda5
	RAW-Lucia™ ISG-KO-RIG-I	Knockout of RIG-I / IRF	Lucia	rawl-korigi
<b>THP-1</b> (human)	THP1-Dual™ KO-MAVS	Knockout of MAVS / NF-κB & IRF	SEAP / Lucia	thpd-komavs
	THP1-Dual™ KO-MDA5	Knockout of MDA5 / NF-κB & IRF	SEAP / Lucia	thpd-komda5
	THP1-Dual™ KO-RIG-I	Knockout of RIG-I / NF-κB & IRF	SEAP / Lucia	thpd-korigi



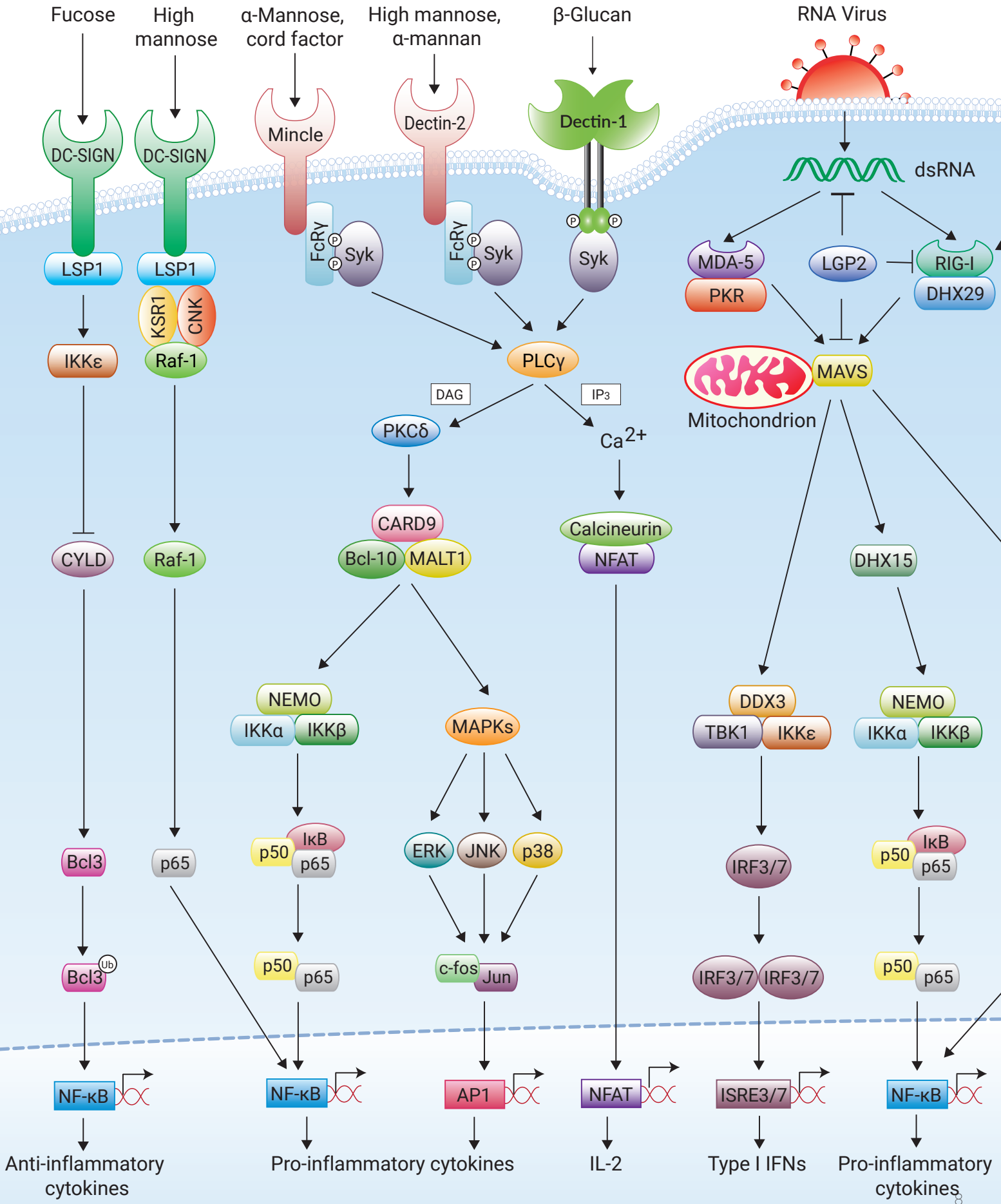
## TLR reporter cells

CELL LINE	PRODUCT	PRR(S) EXPRESSED OR KO / PATHWAY(S)	REPORTER	CAT. CODE
<b>(KO-)TLR / NF-κB REPORTER CELLS</b>				
HEK293 (human)	HEK-Blue™ hMD2-CD14	Human MD2-CD14 / NF-κB	SEAP	hkb-hmddcd
	HEK-Blue™ hTLR2	Human TLR2 / NF-κB	SEAP	hkb-htlr2
	HEK-Blue™ hTLR2-TLR1	Human TLR2 & TLR1 / NF-κB	SEAP	hkb-htlr21
	HEK-Blue™ hTLR2-TLR6	Human TLR2 & TLR6 / NF-κB	SEAP	hkb-htlr26
	HEK-Blue™ hTLR2 KO-TLR1/TLR6	Human TLR2, knockout of TLR2 & TLR6 / NF-κB	SEAP	hkb-htlr2k16
	HEK-Blue™ hTLR3	Human TLR3 / NF-κB	SEAP	hkb-htlr3
	HEK-Blue™ hTLR4	Human TLR4, MD2 & CD14 / NF-κB	SEAP	hkb-htlr4
	HEK-Blue™ hTLR5	Human TLR5 / NF-κB	SEAP	hkb-htlr5
	HEK-Blue™ hTLR7	Human TLR7 / NF-κB	SEAP	hkb-htlr7v2
	HEK-Blue™ hTLR8	Human TLR8 / NF-κB	SEAP	hkb-htlr8
	HEK-Blue™ hTLR9	Human TLR9 / NF-κB	SEAP	hkb-htlr9
	HEK-Blue™ mTLR2	Mouse TLR2 / NF-κB	SEAP	hkb-mtlr2
	HEK-Blue™ mTLR3	Mouse TLR3 / NF-κB	SEAP	hkb-mtlr3
	HEK-Blue™ mTLR4	Mouse TLR4, MD2 & CD14 / NF-κB	SEAP	hkb-mtlr4
	HEK-Blue™ mTLR5	Mouse TLR5 / NF-κB	SEAP	hkb-mtlr5
	HEK-Blue™ mTLR7	Mouse TLR7 / NF-κB	SEAP	hkb-mtlr7
	HEK-Blue™ mTLR8	Mouse TLR8 / NF-κB	SEAP	hkb-mtlr8
	HEK-Blue™ mTLR9	Mouse TLR9 / NF-κB	SEAP	hkb-mtlr9
	HEK-Blue-Lucia™ hTLR2	Human TLR2, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-htlr2ni
	HEK-Blue-Lucia™ hTLR3	Human TLR3, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-htlr3ni
	HEK-Blue-Lucia™ hTLR5	Human TLR5, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-htlr5ni
	HEK-Blue-Lucia™ hTLR9	Human TLR9, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-htlr9ni
	HEK-Blue-Lucia™ mTLR4	Mouse TLR4-MD2-CD14, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-mtlr4ni
	HEK-Blue-Lucia™ mTLR7	Mouse TLR7, double readout (NF-κB / IL-8), Lucia knocked into IL-8	SEAP / Lucia	hkd-mtlr7ni
	HEK-Dual™ hTLR3	Human TLR3 / NF-κB & IRF	SEAP / Lucia	hkd-htlr3
	HEK-Dual™ hTLR7	Human TLR7 / NF-κB & IRF	SEAP / Lucia	hkd-htlr7
	HEK-Dual™ hTLR8	Human TLR8 / NF-κB & IRF	SEAP / Lucia	hkd-htlr8
	<b>(KO-)TLR / NF-κB &amp; IRF REPORTER CELLS</b>			
RAW (mouse)	RAW-Dual™ KO-TLR4	Knockout of TLR4 / MIP-2 (NF-κB) & IRF	SEAP / Lucia	rawd-kotlr4
THP-1 (human)	THP1-Dual™ hTLR3	Human TLR3 / NF-κB & IRF	SEAP / Lucia	thpd-htlr3
	THP1-Dual™ hTLR7	Human TLR7 / NF-κB & IRF	SEAP / Lucia	thpd-htlr7
	THP1-Dual™ hTLR7 KO-TLR8	Human TLR7, knockout of TLR8 / NF-κB & IRF	SEAP / Lucia	thpd-htlr7-ko8
	THP1-Dual™ hTLR8	Human TLR8 / NF-κB & IRF	SEAP / Lucia	thpd-htlr8
	THP1-Dual™ hTLR9	Human TLR9 / NF-κB & IRF	SEAP / Lucia	thpd-htlr9
	THP1-Dual™ KO-TLR2	Knockout of TLR2 / NF-κB & IRF	SEAP / Lucia	thpd-kotlr2
	THP1-Dual™ KO-TLR4	Knockout of TLR4 / NF-κB & IRF	SEAP / Lucia	thpd-kotlr4
	THP1-Dual™ KO-TLR8	Knockout of TLR8 / NF-κB & IRF	SEAP / Lucia	thpd-kotlr8
	THP1-Dual™ MD2-CD14-TLR4	Human TLR4, MD-2 & CD14 / NF-κB & IRF	SEAP / Lucia	thpd-mctlr4
	THP1-Dual™ MD2-CD14 KO-TLR4	Human MD-2 & CD14, knockout of TLR4 / NF-κB & IRF	SEAP / Lucia	thpd-mckotlr4

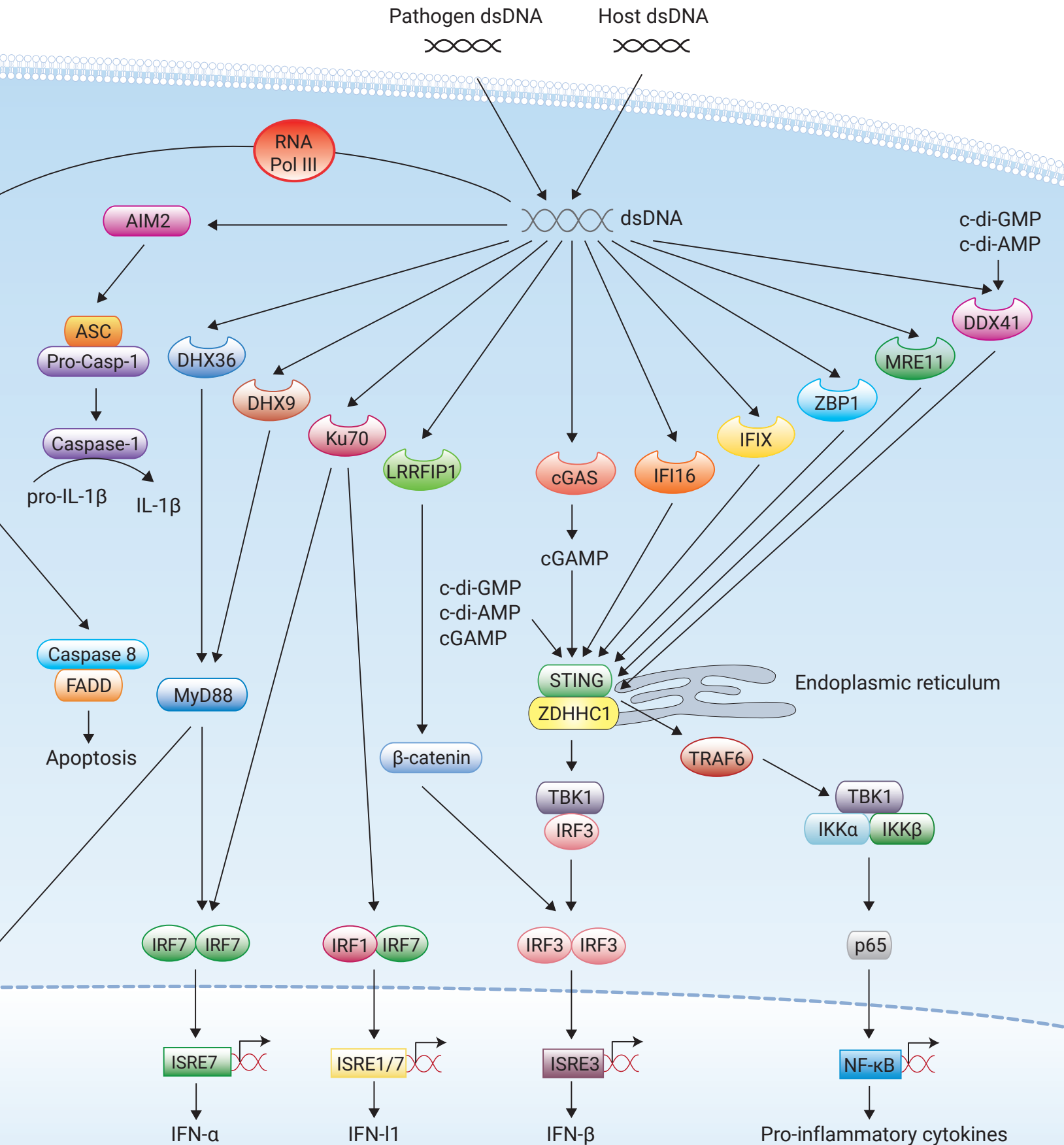
# TLR, RLR, CLR & AHR INHIBITORS



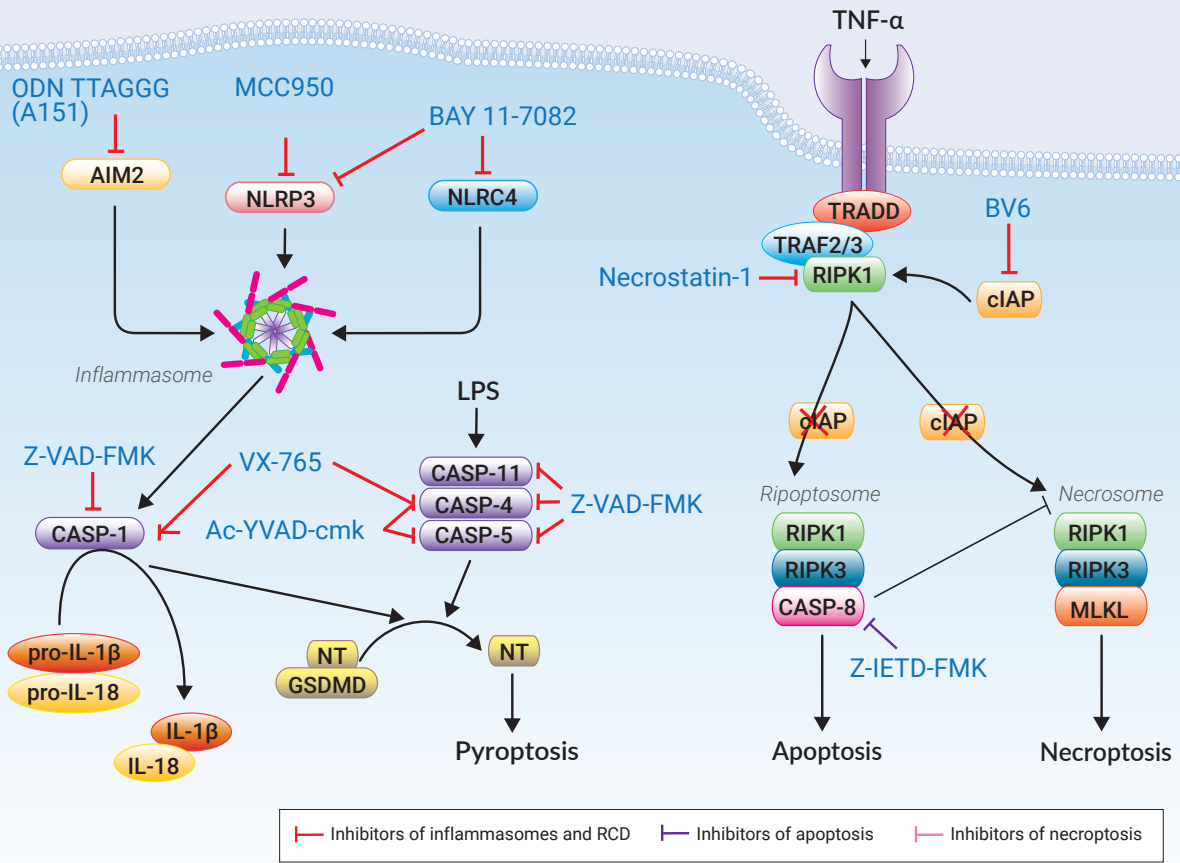
# CLR, RLR & CDS SIGNALING PATHWAYS



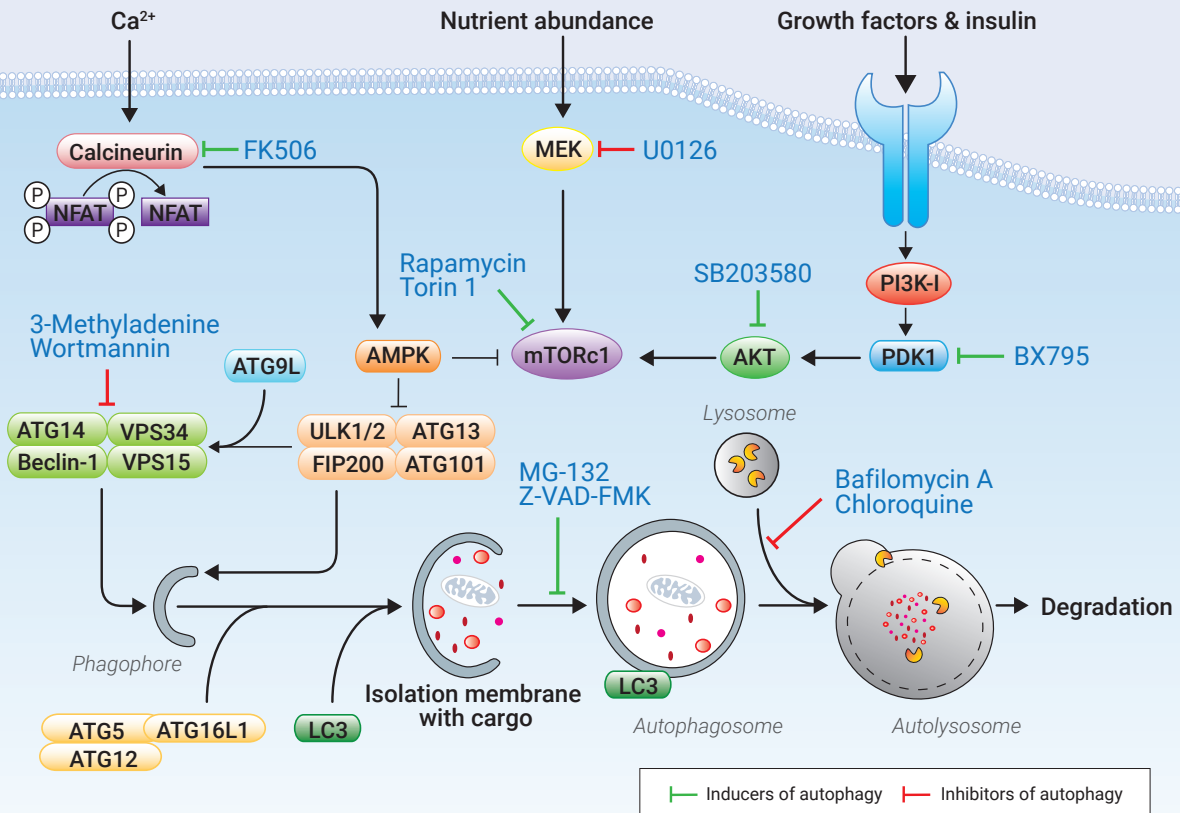




# INFLAMMASOME & REGULATED CELL DEATH MODULATORS



# AUTOPHAGY MODULATORS



Inflammasomes are multiprotein platforms that form upon sensing various exogenous and endogenous stimuli, and trigger the release of IL-1 $\beta$  and IL-18, as well as pyroptotic cell death. InvivoGen provides a series of cell lines that allow the study of the NLRP1, NLRP3, NLRC4, or Caspase-4 inflammasomes. Activation of these inflammasomes can be monitored *in situ* by using fluorescence, or in the culture supernatant by using IL-1 $\beta$  and IL-18 reporter cells (see page 8).



CELL LINE	PRODUCT	GENE EXPRESSED, KO, OR KD	REPORTER	CAT. CODE
<b>INFLAMMASOME TEST CELLS</b>				
<b>RAW</b> (mouse)	RAW-ASC	Murine ASC, control cell line	None	raw-asc
	RAW-ASC KO-CASP11	Murine ASC, knockout of Caspase-11	None	raw-kocasp11
	RAW-ASC KO-GSDMD	Murine ASC, knockout of murine GSDMD	None	raw-kogsdmd
	RAW-ASC KO-NLRC4	Murine ASC, knockout of NLRC4	None	raw-konlrc4
<b>THP-1</b> (human)	THP1-defCASP1	Knockdown of Caspase-1	None	thp-dcasp1
	THP1-KD ASC	Knockdown of ASC	None	thp-dasc
	THP1-KD NLRP3	Knockdown of NLRP3	None	thp-dnlp
	THP1-KO-ASC	Knockout of ASC	None	thp-koasc
	THP1-KO-CASP4	Knockout of Caspase-4	None	thp-kocasp4
	THP1-KO-GSDMD	Knockout of Gasdermin D	None	thp-kogsdmdz
	THP1-KO-NLRC4	Knockout of NLRC4	None	thp-konlrc4z
	THP1-KO-NLRP3	Knockout of NLRP3	None	thp-konlp3z
	THP1-NLRC4	Human NLRC4	None	thp-nlrc4
	THP1-Null	Control cell line	None	thp-null
	THP1-Null2	Control cell line	None	thp-nullz
<b>INFLAMMASOME REPORTER CELLS</b>				
<b>A549</b> (human)	A549-ASC	Human ASC::GFP fusion protein	GFP	a549-ascg
	A549-ASC-NLRP1	Human ASC::GFP fusion protein, human NLRP1	GFP	a549-ascg-nlrp1
<b>THP-1</b> (human)	THP1-ASC-GFP	Human ASC::GFP fusion protein	GFP	thp-ascgfp
	THP1-HMGB1-Lucia™	Human HMGB1::Lucia fusion protein	Lucia	thp-gb1lc

## AUTOPHAGY REPORTER CELLS

InvivoGen provides cell lines of three different origins designed to monitor the autophagic flux by assessing the LC3B protein. These cell lines express a chimeric protein consisting of LC3B fused to GFP and RFP. In autophagosomes, both fluorescent proteins signal while in autolysosomes, GFP signal is reduced and RFP signal remains stable.

CELL LINE	PRODUCT	EXPRESSION	REPORTER	CAT. CODE
<b>LC3 REPORTER CELLS</b>				
<b>HeLa</b> (human)	HeLa-Difluo™ hLC3	Human LC3::GFP::RFP fusion protein	GFP - RFP	heldf-hlc3
<b>RAW</b> (mouse)	RAW-Difluo™ mLC3	Mouse LC3::GFP::RFP fusion protein	GFP - RFP	rawdf-mlc3
<b>THP-1</b> (human)	THP1-Difluo™ hLC3	Human LC3::GFP::RFP fusion protein	GFP - RFP	thpdf-hlc3

# CYTOKINE REPORTER CELLS

Cytokine reporter cells are an expanding family of engineered cell lines designed to provide a simple, rapid, and reliable method to monitor the activation of signaling pathways induced by key cytokines. These cells enable the detection of these biologically active cytokines and can also be used to screen for compounds exhibiting agonist or antagonist activities, such as antibodies.

CELL LINE	PRODUCT	CYTOKINE(S) DETECTED / PATHWAY	REPORTER	CAT. CODE
<b>INTERFERON REPORTER CELLS</b>				
<b>B16</b> (mouse)	B16-Blue™ IFN-α/β	Mouse type I IFNs / STAT1-STAT2-IRF9 (ISGF3)	SEAP	bb-ifnt1
	B16-Blue™ IFN-γ	Mouse type II IFN / STAT1	SEAP	bb-ifng
<b>HEK293</b> (human)	HEK-Blue™ IFN-α/β	Human type I IFNs / STAT1-STAT2-IRF9 (ISGF3)	SEAP	hkb-ifnabv2
	HEK-Blue™ IFN-γ	Human type II IFN / STAT1	SEAP	hkb-ifng
	HEK-Blue™ IFN-λ	Human type III IFNs / STAT1-STAT2-IRF9 (ISGF3)	SEAP	hkb-ifnlv2
<b>INTERLEUKIN REPORTER CELLS</b>				
<b>HEK293</b> (human)	HEK-Blue™ CD122/CD132	Human IL-2 and IL-15 / STAT5	SEAP	hkb-il2bg
	HEK-Blue™ IL-1β	Human IL-1β, knock-out of TNFR1 / NF-κB	SEAP	hkb-il1b
	HEK-Blue™ IL-1R	Human & mouse IL-1α/β / NF-κB	SEAP	hkb-il1r
	HEK-Blue™ IL-2	Human & mouse IL-2 / STAT5	SEAP	hkb-il2
	HEK-Blue™ IL-4/IL-13	Human IL-4 and human & mouse IL-13 / STAT6	SEAP	hkb-il413
	HEK-Blue™ IL-5	Human & mouse IL-5 / STAT5	SEAP	hkb-il5
	HEK-Blue™ IL-6	Human IL-6 / STAT3	SEAP	hkb-hil6
	HEK-Blue™ IL-7	Human & mouse IL-7 / STAT5	SEAP	hkb-il7
	HEK-Blue™ IL-9	Human & mouse IL-9 / STAT5	SEAP	hkb-il9
	HEK-Blue™ IL-10	Human IL-10 / STAT3	SEAP	hkb-il10
	HEK-Blue™ IL-12	Human & mouse IL-12 / STAT4	SEAP	hkb-il12
	HEK-Blue™ IL-17	Human IL-17A/F and human & mouse IL-17E / NF-κB	SEAP	hkb-il17
	HEK-Blue™ IL-17C	Human & mouse IL-17C/E and human IL-17A / NF-κB	SEAP	hkb-il17c
	HEK-Blue™ IL-18	Human & mouse IL-18 / NF-κB	SEAP	hkb-hmil18
	HEK-Blue™ IL-19/IL-20	Human & mouse IL-19, IL-20 & IL-24	SEAP	hkb-il1920
	HEK-Blue™ IL-20	Human & mouse IL-20 IL-22 & IL-24	SEAP	hkb-il20
	HEK-Blue™ IL-21	Human & mouse IL-21	SEAP	hkb-il21
	HEK-Blue™ IL-22	Human & mouse IL-22 / STAT3	SEAP	hkb-il22
	HEK-Blue™ IL-23	Human & mouse IL-23 / STAT3	SEAP	hkb-il23
	HEK-Blue™ IL-33	Human IL-33 / NF-κB	SEAP	hkb-hil33
HEK-Blue™ IL-36	Human IL-36 / NF-κB	SEAP	hkb-hil36r	
<b>GROWTH FACTOR REPORTER CELLS</b>				
<b>HEK293</b> (human)	HEK-Blue™ CD40L	Human CD40L / NF-κB	SEAP	hkb-cd40
	HEK-Blue™ GM-CSF	Human GM-CSF / STAT5	SEAP	hkb-hgmcfsr
	HEK-Blue™ RANKL	Human & mouse RANKL / NF-κB	SEAP	hkb-rankl
	HEK-Blue™ TPO	Human & mouse TPO / STAT5	SEAP	hkb-tpo
<b>TUMOR NECROSIS FACTOR FAMILY CYTOKINES REPORTER CELLS</b>				
<b>HEK293</b> (human)	HEK-Blue™ TGF-β	Human TGF-β / Smad	SEAP	hkb-tgfb
	HEK-Blue™ TNF-α	Human & mouse TNF-α, knockdown of MyD88 / NF-κB	SEAP	hkb-tnfdmyd
	HEK-Blue-Lucia™ TNF-α	Human & mouse TNF-α, knockdown of MyD88 / NF-κB (dual reporter)	SEAP/Lucia	hkd-tnfa

InvivoGen's Immune-Checkpoint bioassays are cell-based bioluminescent assays designed for the screening of Immune Checkpoint activators or inhibitors. These assays provide a biologically relevant, sensitive, and well-controlled alternative to the use of primary T cells.



CELL LINE	PRODUCT	GENE(S) EXPRESSED / (PATHWAY)	REPORTER	CAT. CODE
<b>JURKAT-RAJI PD-1/PD-L1 ASSAY</b>				
<b>Jurkat</b> (human)	PD-1/PD-L1 BioIC™ (Jurkat-Lucia™ TCR-hPD1 & Raji-APC-hPD-L1)	Human PD-1, CD28 and specific [HLA::peptide]-restricted TCR / NFAT	Lucia	rajkt-hpd1
<b>&amp; Raji</b> (human)		Human PD-L1 and specific [HLA::peptide]	None	
<b>Raji</b> (human)	Raji-APC-Null	Specific [HLA::peptide]	None	raji-apc-null
<b>JURKAT-RAJI ICOS/ICOS-L ASSAY</b>				
<b>Jurkat</b> (human)	ICOS/ICOS-L Bio-IC™ (Jurkat-Lucia™ ICOS & Raji-ICOS-L)	Human ICOS / NFAT	Lucia	rajkt-hicos
<b>&amp; Raji</b> (human)		Human ICOS-L	None	
<b>Jurkat</b> (human)	Jurkat-Lucia™ hICOS Cells	Human ICOS / NFAT	Lucia	jklt-icos

## ADCC AND ADCP BIOASSAYS

InvivoGen has developed cell-based assays designed for the analysis of ADCC or ADCP activity of a given antibody. These bioassays comprise a series of Jurkat reporter T cells, co-expressing CD16 or CD32 and an NFAT-inducible Lucia reporter gene, and a collection of Raji B cells, expressing an immune checkpoint or tumoral antigen.

CELL LINE	PRODUCT	GENE(S) EXPRESSED / (PATHWAY)	REPORTER	CAT. CODE
<b>ADCC AND ADCP EFFECTOR CELLS</b>				
<b>Jurkat</b> (human)	Jurkat-Lucia™ NFAT-CD16	Human CD16A (FcγRIIIA, V158 allotype) / NFAT	Lucia	jklt-nfat-cd16
	Jurkat-Lucia™ NFAT-CD16 low	Human CD16A (FcγRIIIA, F158 allotype) / NFAT	Lucia	jklt-nfat-cd16lo
	Jurkat-Lucia™ NFAT-CD32	Human CD32A (FcγRIIA; H131 allotype) / NFAT	Lucia	jklt-nfat-cd32
<b>ADCC AND ADCP TARGET CELLS</b>				
<b>Raji</b> (human)	Raji-Null	Control Target Cells	None	raji-null
	Raji-h4-1BB	Human 4-1BB	None	raji-h41bb
	Raji-hCTLA4	Human CTLA4	None	raji-hctla4
	Raji-hEGFR	Human EGFR	None	raji-hegfr
	Raji-HER2	HER2	None	raji-her2
	Raji-hICOS	Human ICOS	None	raji-hicos
	Raji-hLAG3	Human LAG3	None	raji-hlag3
	Raji-hOX40	Human OX40	None	raji-hox40
	Raji-hPD-1	Human PD-1	None	raji-hpd1
	Raji-hPD-L1	Human PD-L1	None	raji-hpd1l
	Raji-hTIGIT	Human TIGIT	None	raji-htigit
	Raji-hVISTA	Human VISTA	None	raji-hvista

COVID-19-related cell lines, which derive from the HEK293 or A549 cell lines, are specifically designed for the study of SARS-CoV-2 infection. They can also be used for the development of novel therapeutics targeting either the virus or the subsequent inflammatory response.

CELL LINE	PRODUCT	CYTOKINE(S) DETECTED / PATHWAY	REPORTER	CAT. CODE
<b>SPIKE EXPRESSING CELL LINES</b>				
HEK293 (human)	293-SARS2-S	SARS-CoV-2 spike (D614)	None	293-cov2-s
	293-SARS2-S-dfur	SARS-CoV-2 spike (D614), inactive furin (dfur) cleavage site	None	293-cov2-sdf
<b>SARS-CoV2 PERMISSIVE CELL LINES</b>				
HEK293 (human)	HEK-Blue™ hACE2	Human ACE2 / NF-κB	SEAP	hkb-hace2
	HEK-Blue™ hACE2-TMPRSS2	Human ACE2 & TMPRSS2 / NF-κB	SEAP	hkb-hace2tpsa
A549 (human)	A549-hACE2	Human ACE2	None	a549-hace2
	A549-hACE2-TMPRSS2	Human ACE2 & TMPRSS2	None	a549-hace2tpsa
	A549-ASCoV2	Human ACE2, TMPRSS2 & ASC::GFP fusion protein	GFP	a549-ascov2
	A549-ASCoV2-NLRP1	Human ACE2, TMPRSS2, NLRP1 & ASC::GFP fusion protein	GFP	a549-ascov2-nlrp1
	A549-Dual™ hACE2-TMPRSS2	Human ACE2 & TMPRSS2 / NF-κB & IRF	SEAP/Lucia	a549d-cov2r
	A549-Dual™ KO-MDA5 hACE2-TMPRSS2	Human ACE2 & TMPRSS2, knockout of MDA5 / NF-κB & IRF	SEAP/Lucia	a549d-komda5-cov2r
	A549-Dual™ KO-RIG-I hACE2-TMPRSS2	Human ACE2 & TMPRSS2, knockout of RIG-I / NF-κB & IRF	SEAP/Lucia	a549-ascov2
<b>DONOR CELLS FOR FUSION ASSAYS</b>				
HEK293 (human)	293-hMyD88	Human MyD88	None	293-hmyd



## WE ALSO OFFER

### PRR LIGAND SCREENING



Level 1 - Compound Profiling:  
Single dose testing on a set of PRRs  
Level 2 - Compound Dose Response:  
Dose response on one or several PRRs.  
[invivogen.com/custom-tlr-screening](https://invivogen.com/custom-tlr-screening)



### CELL LINES UPON REQUEST



Some cell lines have been removed from our catalog. However, you may contact us if you wish to order minimal quantities. You may access the list here:  
[invivogen.com/cell-lines-upon-request](https://invivogen.com/cell-lines-upon-request)



**NEW**

### TIGER TET-ON SYSTEM Inducible Protein Expression



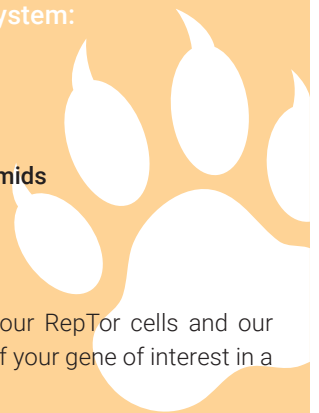
A new and improved Tet-on system, specifically designed for the controlled expression of cytotoxic proteins.

#### Two-component inducible system:

- **TetR-expressing cell lines**
  - HEK-RepTor cells
  - A549-TepTor cells
- **Tet-inducible expression plasmids**
  - pTiGer-mcs plasmids
  - pTiGer-reporter plasmids

Save time and effort by using our RepTor cells and our custom service for the cloning of your gene of interest in a pTiGer plasmid of your choice.

[invivogen.com/tet-on-inducible-protein-expression](https://invivogen.com/tet-on-inducible-protein-expression)



## SEAP DETECTION

InvivoGen provides two products for the detection of SEAP (secreted embryonic alkaline phosphatase) activity in cell culture supernatants. Both products allow colorimetric detection of SEAP activity through a color change from pink to purple-blue. Quantitative monitoring can be performed by reading the optical density (OD) at 620-655nm using a spectrophotometer.

### HEK-Blue™ Detection

HEK-Blue™ Detection is a [cell culture medium](#) for HEK293-derived SEAP reporter cells. It is provided as a powder which contains all the nutrients necessary for cell growth and a specific SEAP substrate. HEK-Blue™ Detection allows fast and convenient [real-time detection](#) of SEAP expression by the naked eye.



### QUANTI-Blue™

QUANTI-Blue™ is a [SEAP detection reagent](#) that offers highly sensitive and rapid detection of SEAP in cell culture supernatants. This liquid formulation is concentrated (100X) and is therefore adaptable to your needs. It has been optimized for use in [96-well plates \(standard procedure\)](#) and in [1536-well plates \(high-throughput screening procedure, HTS\)](#).

PRODUCT	QUANTITY	CAT. CODE
HEK-Blue™ Detection	5 pouches	hb-det2
	10 pouches	hb-det3
QUANTI-Blue™	5 ml	rep-qbs
	10 ml	rep-qbs2
	20 ml	rep-qbs3

## LUCIA, GAUSSIA, AND RENILLA DETECTION

InvivoGen provides two products for the bioluminescent detection of the secreted Lucia and Gaussia luciferases or the intracellular Renilla luciferase. These products are comprised of a concentrated coelenterazine substrate and an optional stabilizer (for Lucia/Gaussia), plus an additional lysis buffer (for Renilla). Quantitative monitoring of luciferase activity is performed using a luminometer.

### QUANTI-Luc™ 4 Lucia/Gaussia

QUANTI-Luc™ 4 Lucia/Gaussia is a [ready-to-use](#) bioluminescent assay reagent for the detection of Lucia and Gaussia activity, two coelenterazine-utilizing secreted luciferases.

This liquid formulation contains two components, QUANTI-Luc™ 4 Reagent (coelenterazine substrate) and QUANTI-Luc™ 4 Stabilizer (optimized Glow assay reagent). It provides a bright signal for both [Flash and Glow detection](#) luciferase detection.



### QUANTI-Luc™ 4 Renilla

QUANTI-Luc™ 4 Renilla is a [ready-to-use](#) bioluminescent assay reagent for the detection of Renilla activity, a coelenterazine-utilizing intracellular luciferase. This liquid formulation contains two components, QUANTI-Luc™ 4 Reagent (coelenterazine substrate) and QUANTI-Luc™ 4 Lysis Buffer.

PRODUCT	QUANTITY	CAT. CODE
QUANTI-Luc™ 4 Lucia/Gaussia	500 tests	rep-qlc4g1
	2 x 500 tests	rep-qlc4g2
	5 x 500 tests	rep-qlc4g5
	10 000 tests	rep-qlc4g20
QUANTI-Luc™ 4 Renilla	500 tests	rep-qlc4r1
	2 x 500 tests	rep-qlc4r2
	5 x 500 tests	rep-qlc4r5



**Bulk quantity available for HTS.** For research purposes only. Not intended for use on animals or humans.

InvivoGen provides **high-quality** and **affordable** selective antibiotics to ensure artifact-free selection of transfected mammalian cells. All InvivoGen selective antibiotics are manufactured in its state-of-the-art facility from its own proprietary strains. These antibiotics are **ready-to-use**, **sterile**, and **endotoxin-free** to avoid the deleterious effects of bacterial endotoxins on transfected cells. They are functionally validated through rigorous physico-chemical, microbiological and cellular testing. They exhibit proven **long-term stability** to mammalian cells with **no cytotoxicity**.



For research purposes only. Not intended for use on animals or humans.

SELECTIVE ANTIBIOTIC	CAT. CODE
Blasticidin	ant-bl-1
G418 Sulfate (Geneticin)	ant-gn-1
HEK-Blue™ Selection	hb-sel
Hygromycin B Gold	ant-hg-1
Phleomycin	ant-ph-1
Puromycin	ant-pr-1
Zeocin®	ant-zn-05

Bulk quantity available

## BE VIGILANT TO KEEP YOUR CELLS SAFE

Microbial contamination of cell cultures is a serious and relentless threat to your research. Invasive mycoplasma, bacteria, and fungi can kill or drastically alter cells in culture, leading to disastrous results, lost time, and wasted resources. InvivoGen offers a **wide range of highly specific** and **fast-acting** reagents to help you **prevent, detect** and **eliminate** microbial contaminations, with **minimal toxicity to eukaryotic transformed and primary cells**. All products are validated through strict quality control.

PRODUCT	DESCRIPTION	CAT. CODE
<b>MYCOPLASMA DETECTION</b>		
Plasmotest™	Colorimetric cellular assay - recommended for routine tests	rep-pt1
MycroStrip™	Genomic detection strips - recommended for immediate results	rep-mys-10
<b>MICROBIAL ELIMINATION</b>		
Fungin™	Treatment for yeast, hyphae, and mold removal	ant-fn-1
Normocure™	Treatment for multidrug-resistant bacteria removal	ant-noc
Plasmocin® treatment	Treatment for broad-spectrum mycoplasma removal	ant-mpt
Plasmocure™	Treatment for Plasmocin™-resistant mycoplasma removal	ant-pc
<b>MICROBIAL PREVENTION</b>		
Fungin™	Yeast, hyphae, and mold contamination preventive reagent	ant-fn-1
Normocin™	Broad-spectrum contamination preventive reagent	ant-nr-1
Plasmocin® prophylactic	Reagent for preventing mycoplasma contamination	ant-mpp
Primocin®	Broad-spectrum contamination preventive reagent designed for primary cells	ant-pm-1



### LEARN MORE

Practical guide on cell culture contamination  
[invivogen.com/cell-culture](http://invivogen.com/cell-culture)