HUMAN HEALTH

ENVIRONMENTAL HEALTH

Distinctive Luminescence Instruments and Reagents

PerkinElmer®
For the Better

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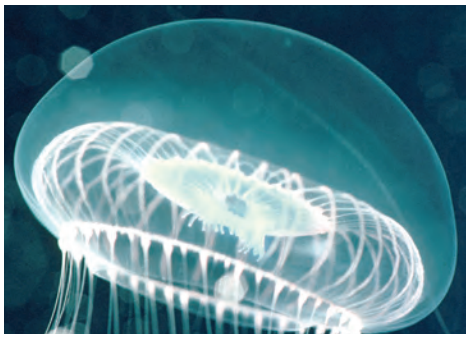


PLATFORM OVERVIEW

STREAMLINED DETECTION. SIMPLY BRILLIANT.

Luminescence detection platforms provide simple and reproducible results over a wide dynamic range offering great value for many research and discovery applications. Choose from a variety of assay systems and instruments to optimally streamline your detection needs.

KEY BENEFITS

Luminescence detection:

- **Cost-effective**
- **Easy set-up** for high throughput
- **Rapid** – miniaturizable and automatable; some systems allow results in 15-25 minutes
- **No separation** steps (homogeneous assays)
- **Sensitive** – better than fluorescence technologies
- **Less interference**

LUMINESCENCE ASSAY SYSTEMS AND INSTRUMENTS

	AequoScreen AequoZen PhotoScreen	britelite plus	steadylite plus	neolite	ATPlite 1step	ATPlite
Applications	• Calcium Flux • GPCR • Ion Channels	• Reporter Gene Assay • GPCR	• Reporter Gene Assay • GPCR	• Reporter Gene Assay • GPCR	• Cytotoxicity • Cell Proliferation Assay	• Cytotoxicity • Cell Proliferation Assay
Half-life (hours)	Flash	0.5	4 to 5	2.5	0.5	5
Sensitivity	High	Very High	Moderate	High	As few as 5 cells/well	As few as 5 cells/well
Plate Format (wells)	96 384 1536	96 384 1536	96 384 1536	96 384 1536	96 384 1536	96 384 1536
Instrumentation	— MicroBeta^2 LumiJET EnVision VICTOR *X* VICTOR *X* Light —	TopCount MicroBeta^2 EnSpire EnVision VICTOR *X* VICTOR *X* Light ViewLux	TopCount MicroBeta^2 EnSpire EnVision VICTOR *X* VICTOR *X* Light ViewLux	TopCount MicroBeta^2 EnSpire EnVision VICTOR *X* VICTOR *X* Light ViewLux	TopCount MicroBeta^2 EnSpire EnVision VICTOR *X* VICTOR *X* Light ViewLux	TopCount MicroBeta^2 EnSpire EnVision VICTOR *X* VICTOR *X* Light ViewLux

INTENSITY. FLEXIBILITY. JUST RIGHT FOR EVERY ASSAY.

Whether your assay requires the sensitivity provided by high signal intensity, or the flexibility of an extended signal half-life, PerkinElmer provides a solution. Choose from one of three luciferase detection systems: neolite, britelite plus, or steadylite plus depending on the specific requirements of your experiment.

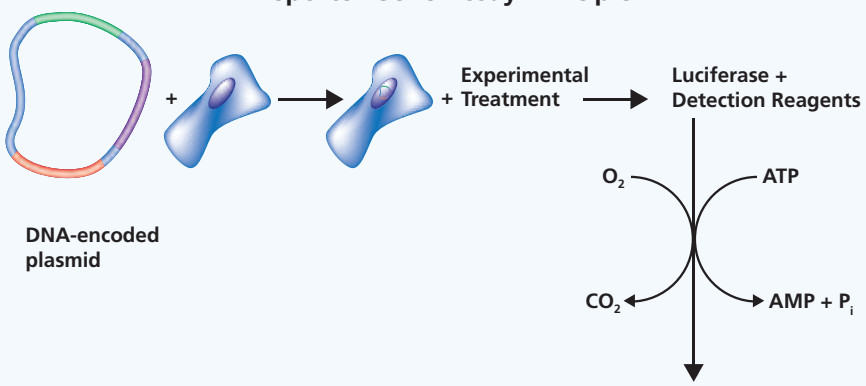
KEY BENEFITS

- **No more washing** – just add your lites reagent of choice, mix, incubate, and read
- **Hassle-free storage** – all lites reagents are designed for extended storage at 2-8 °C (no -20 °C storage required)
- **Odor-friendly**, eliminates hood work – lites products do not contain DTT and do not have the hazards and repugnant odor typical of conventional luciferase detection systems
- **Excellent Z' values** – superior S/B ratios allow for excellent Z' values in antagonist and agonist studies

neolite — Bright and Stable

neolite offers the ultimate compromise between strong signal intensity and extended signal half-life. It provides a minimum half-life of 2.5 hours while maintaining excellent sensitivity. neolite also delivers superior reproducibility, as it has less sensitive mixing conditions than typical luminescent detection systems. It is ideal for medium to high throughput applications which employ batch processing methods but still require exceptional sensitivity.

Reporter Gene Assay Principle



Reporter gene assays utilizing the luciferase gene, derived from the North American firefly Photinus pyralis, have long been used as a sensitive method to monitor changes in gene expression. Firefly luciferase catalyzes the oxidation of the substrate luciferin to produce light, allowing direct measurement of luciferase activity levels via luminescent detection. Thus, expression levels of a gene of interest can be tracked through creation of a recombinant gene fusion with luciferase and subsequent quantitation of luciferase activity.

steadylite plus — Long-lived Glow

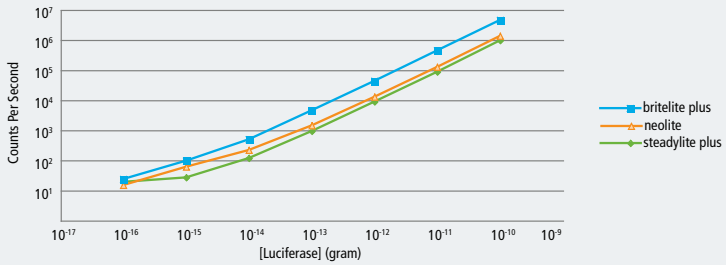
steadylite plus was developed to provide an extended signal half-life of up to 5 hours. This extended half-life makes steadylite plus the reagent of choice for high throughput screening where you require the same steady signal first plate in to last plate out.

britelite plus — Intensively Sensitive

britelite plus possesses an extremely strong signal intensity. With a signal half-life of 30 minutes, it is ideal for assays requiring the utmost sensitivity and for any application employing continuous processing methodology.
See Applications Table on page 4.

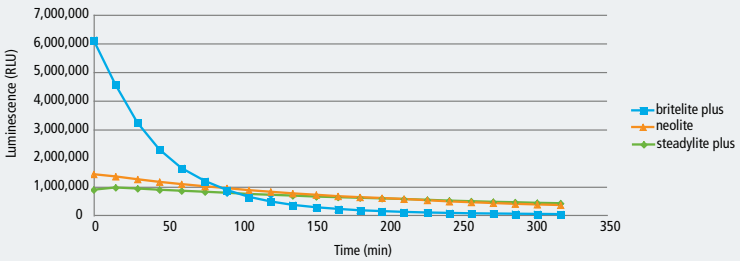
EnSpire multilabel plate reader with ultra-sensitive luminescence requires fewer cells to get the same signal as standard luminescence saving on expensive transfection reagent and substrate costs.

High performance sub-femtomole detection



A dilution series of luciferase enzyme where luciferase, britelite plus and neolite have a sub-femtomole detection limit for luciferase compared to steadylite plus.

Luminescence for 10^{-10} g luciferase per well



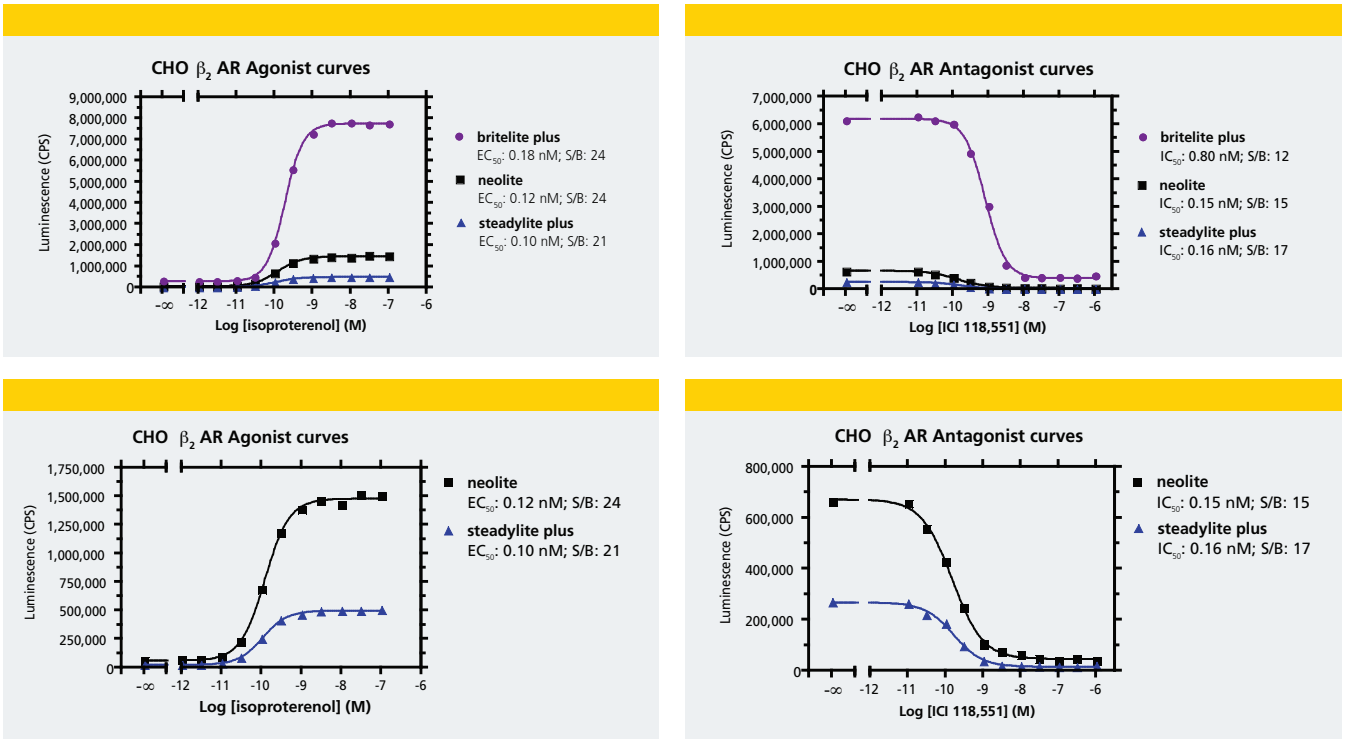
Time course of the luminescent signal of britelite plus, neolite and steadylite plus where britelite plus shows an intense signal with rapid decrease in signal and neolite and steadylite plus both show strong signal intensity over an extended period of time.

The PerkinElmer suite of luciferase detection systems brings the simplicity of reporter gene assays to a whole new level. All lites products offer superior performance, while still providing convenient one-step processing and ease of storage and handling.

	neolite	steadylite plus	britelite plus
Sensitivity	High	Moderate	Very High
Half-life (hours)	2.5	5	0.5
Plate Format	96, 384, 1536	96, 384, 1536	96, 384, 1536
Applications	• Low transfection efficiencies • Primary cell transfection • Increased assay windows • Extended read times • Batch processing	• Strong steady signal • Extended read time • High throughput screening • Extended batch processing	• Superior sensitivity • Low transfection efficiencies • Stem cell transfection • Rapid read time – continuous processing

Part Number			Volume (mL)	Data Points*
neolite	steadylite plus	britelite plus		in 96-, 384- and 1536-well microplates
6016716	6016756	6016766	10	100, 400, 3300
6016711	6016751	6016761	100	1000, 4000, 33000
6016767	6016757	6016767	500	5000, 20000, 165000
6016769	6016759	6016769	1000	10000, 40000, 330000

* The recommended assay volumes are 100 µL for 96-well microplates, 25 µL for 384-well microplates and 3 µL for 1536-well microplates.



Agonist and antagonist dose-response curves comparing britelite plus, neolite and steadylite plus.

LIGHT UP THE ATP LEVELS AT YOUR PACE.

Fast, reliable detection of ATP for cell quantification

ATPlite 1step and ATPlite are patented[1] innovative technologies that measure cell proliferation and cytotoxicity in mammalian cells based on the detection of ATP using firefly luciferase. Light production caused by the reaction of ATP with added luciferase and D-luciferin is proportional to the ATP concentration.

ATP is a marker for cell viability because it is present in all metabolically active cells. Because ATP concentration declines rapidly when cells undergo necrosis or apoptosis, monitoring ATP is a good indicator of cytocidal, cytostatic, and proliferation effects.

KEY BENEFITS

ATPlite 1step – Highest Sensitivity

- True "mix and measure" continuous processing
- Ultra high sensitivity, 3 times more light output than ATPlite
- Short equilibrium time for faster processing
- Signal half-life of 30 minutes

ATPlite – Convenient, Extended Signal

- 2-step format, non-separation assay for time course studies; lysate can be stored frozen and tested later
- Quantitate from <5 cells/well
- Prolonged equilibrium time for batch processing
- Signal half-life of 5 hours

Description	Part Number	Volume (mL)	Data Points* in 96-, 384- and 1536-well microplates
ATPlite 1step	6016736	10	100, 400, 3300
	6016731	100	1000, 4000, 33000
	6016739	1000	10000, 40000, 330000
ATPlite	6016943	30	300, 1200, 9900
	6016941	100	1000, 4000, 33000
	6016947	500	5000, 20000, 16500
	6016949	1000	10000, 40000, 330000

* The recommended assay volumes are 100 µL for 96-well microplates, 25 µL for 384-well microplates and 3 µL for 1536-well microplates.

1. U.S. Pat. 6503723; EP Pat. 117825 (CH, DK, GB, DE 69924127);
NL Pat. 1010224; Canada Patent Appl. No. 2345721; Australian Patent Appl. No. 754602; other patents pending.

ROBUST ASSAYS FOR CALCIUM FLUX IN A FLASH.

AequoScreen Aequorin and PhotoScreen Photina photoproteins are derived from the jellyfish *Aequoria victoria* and *Obelia longissima* respectively. Upon calcium binding, the photoprotein oxidizes coelenterazine into coelenteramide with the production of CO_2 and emission of light. Because both can reduce costs and increase productivity, they are ideal replacement technologies for standard fluorescent dyes.

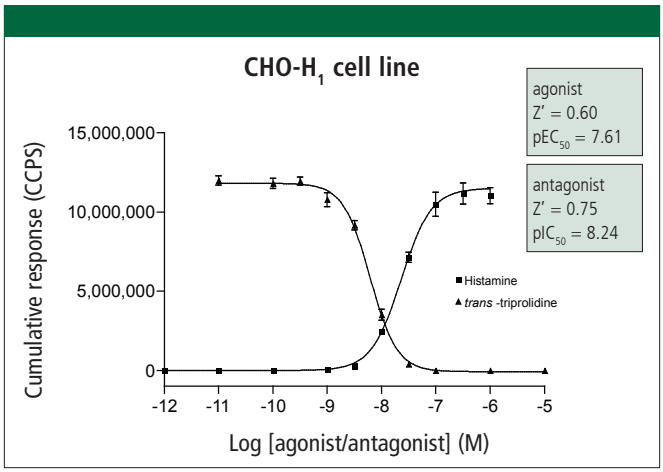
KEY BENEFITS:

Photoprotein technology:

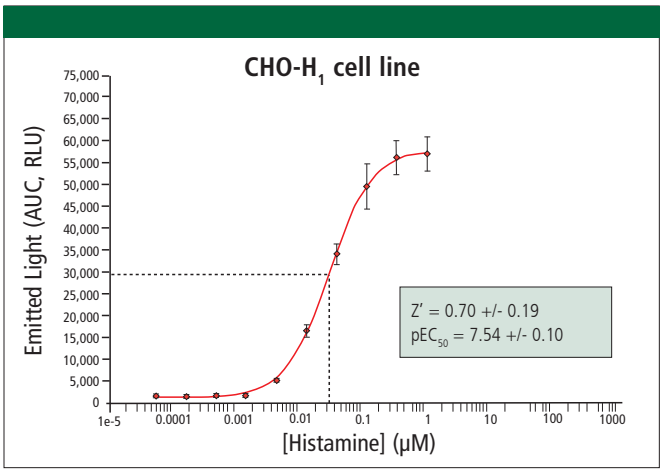
- **Fully automatable –** can be miniaturized to 1536 format
- **Reduces reagent and consumable costs**, including the number of cells required for an assay
- **Allows accurate detection** of agonists, antagonists, partial agonists, and allosteric modulators through high signal-to-noise background ratio
- **Delivers robust assay** (high Z', low CV values)
- **Offers powerful tools** to convert mammalian cell lines already expressing a GPCR to a luminescence assay format
- **Reduces false positives** from auto-fluorescent compounds in screening libraries
- **Increases throughput** using option to work with cells in suspension
- **Achieves efficient, high throughput** – over 200,000 data points/day (depending on assay instrument and microplate format)

The ideal calcium flux assay for GPCR analysis — AequoScreen

AequoScreen is a generic GPCR technology, which can be used with dedicated flash luminescence instrumentation (MicroBeta² LumiJET, VICTOR, EnVision, FLIPR®TETRA, FLIPR®TETRA (aequorin option) FDSS) to measure calcium from G_q-coupled receptors or G_s-, G_i-coupled receptors through a promiscuous or chimeric G-protein.



Histamine H_1 AequoScreen cell line agonist and antagonist suspension assay dose response curves demonstrate the quality of data produced by the MicroBeta² LumiJET. Histamine H_1 AequoScreen cells (5000 cells) were dispensed together with buffer or antagonist (trans-triprolidine, final concentration 10 x IC_{50}) into an OptiPlate-384 in 36 replicates. The agonist (histamine, final concentration 10 x EC_{50}), was dispensed and resulting luminescence was recorded using the MicroBeta² LumiJET (total volume, 70 µl).



Histamine dose response curve, 1536-well suspension assay, 1500 cells/well (mean +/- SD from 32 wells) run on a LumiLux®, demonstrating that the aequorin technology can be miniaturized.

The AequoScreen platform includes:

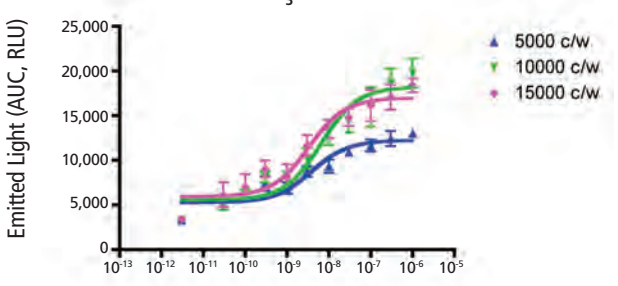
- **Parental cell lines** expressing mitochondrially targeted apoaequorin with or without the promiscuous G-protein $G\alpha_{16}$
- **Double transfected cell lines** expressing mitochondrially targeted apoaequorin and GPCR with or without the promiscuous G-protein $G\alpha_{16}$
- **AequoZen** frozen ready-to-use cells: growth arrested double transfected cell lines available frozen for immediate use (see next page)
- **Aequorin plasmids** expressing mitochondrially targeted apoaequorin protein under the control of the CMV promoter, with or without the promiscuous G-protein $G\alpha_{16}$
- **Fully validated Starter Kits** for AequoScreen cell lines and AequoZen ready-to-use cells enabling you to become familiar with the AequoScreen technology

PhotoScreen — a novel assay for calcium coupled ion channel analysis

Photina is a chimeric photoprotein, generated from obelin and clytin, which can be used to measure calcium from G_i-, G_q-, and G_s- coupled receptors as well as calcium-coupled ion channels and transporters. Photina light emission can also be measured using flash luminescence instrumentation.

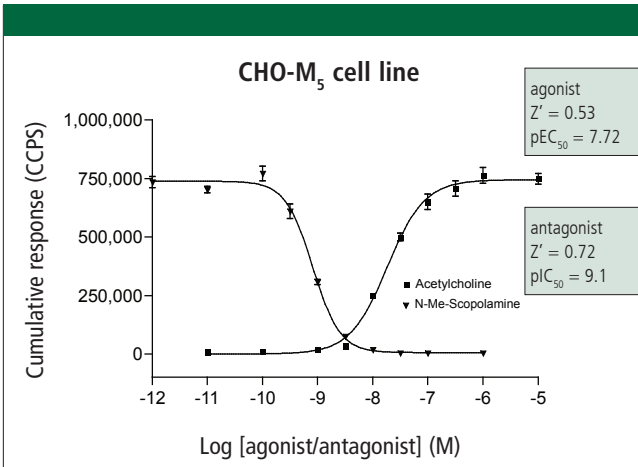
The PhotoScreen platform includes:

- **Double transfected cell lines** expressing mitochondrially targeted apophotoprotein and a recombinant calcium coupled ion channel/transporter or a recombinant GPCR with or without the G_{qi3}
- **Fully Validated Cell Line Starter Kit**

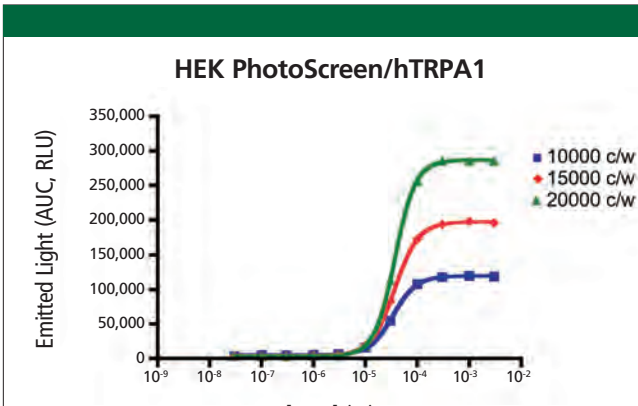


	5,000 c/w	10,000 c/w	15,000 c/w
EC_{50}(M)	3.8e-009	6.6e-009	3.3e-009

IB-MECA agonist 384-well adherent assay, cell density study. (Mean +/- SD 8 wells) run on a FLIPR®TETRA.



The Muscarinic M_5 AequoScreen cell line agonist (Acetylcholine) and antagonist (N-Me-Scopolamine) dose response curves run on a MicroBeta² LumiJET. 384-well format, 6,000 cells/well.



	10,000 c/w	15,000 c/w	20,000 c/w
EC_{50}(M)	3.4e-5	3.6e-5	3.7e-5

384-well suspension assay, cell density study, (Mean +/- SD 8 wells) run on a LumiLux.

CELL LINE – FROZEN CELLS
CALCIUM DETECTION

FULLY VALIDATED FROZEN CELLS
OFF THE SHELF
OR CUSTOM-MADE

AequoZen frozen cells, pre-validated for aequorin calcium detection, enable rapid and cost-effective GPCR profiling, pharmacology or screening applications.

KEY BENEFITS

- **Available off-the-shelf** or customized to your needs
- **Simple** step-by-step protocols for cell culture functional testing
- **Affordable** access to small aliquots of cells (10 x 10^6 cells)
- **Highest quality**, growth-arrested gamma irradiated cells to minimize biological variation
- **Versatile** up-scaling to suit specific needs

Ready-to-use cells take the stress out of functional testing

We remove the lengthy cell culture process from your functional testing; we culture the cells, freeze them with an optimized protocol, and gamma irradiate them to stop replication. These cells are then stored in liquid nitrogen or at -80 °C. Simply thaw them and use in your functional, cellular GPCR test.

Confident validation

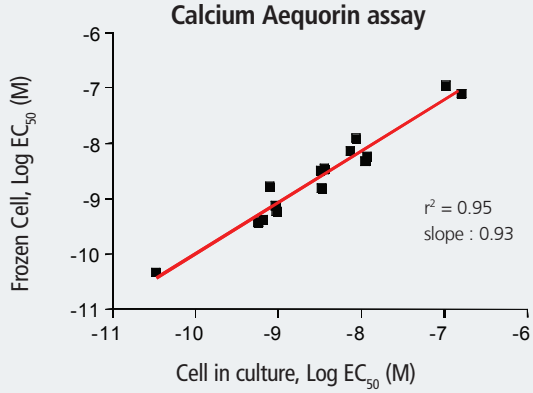
We validate defined families of GPCRs that let you perform selectivity studies rapidly and cost-effectively as needed. Validated batches give results meeting our QC criteria, both on agonist EC_{50} and signal window, so you can obtain the same reliable results with every purchase, every time.

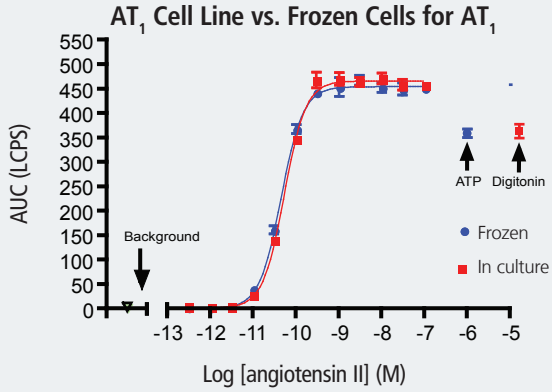
Convenient flexibility

Frozen cells are available off-the-shelf in aliquots of 10 million cells per vial only for catalog products. Other sizes are offered for custom service only. We also scale-up to provide you with validated cells for full screening campaigns. Whether it is for screening, lead optimization or profiling, you can now perform cellular GPCR tests immediately by using batches of frozen cells on multiple receptors at a time. Users have the option to work in both suspension and adherent mode.

Quality you can trust

Our frozen cell portfolio undergoes a rigorous QC procedure; this procedure does not leave any trace of hazardous chemicals in the cell media and has been titrated to preserve functional response.





	Cells in Culture	Frozen Cells
EC_{50}(M)	4.30	5.09

All batches are tested for quality of assay window and consistency of EC_{50} values. The calcium aequorin assay (left) illustrates the correlation between EC_{50} values of the reference agonist obtained on fresh versus frozen cells with an aequorin readout on 15 receptors. The AT_1 pharmacology comparison values (right) are similar between fresh AequoScreen AT_1 cell line kept in continuous culture and equivalent frozen cells.

CELL LINE AND FROZEN CELL PRODUCT LISTING

ORDERING INFORMATION

If you do not see the target you are interested in, please inquire as we are continuously expanding our portfolio and also provide custom cell line development.

STARTER KITS			
Product	**Receptor**	**Type**	**Cat. No.**
AequoScreen starter kit	H_1 and M_5	AequoScreen Cell Line	ES-001-A
AequoZen starter kit	H_1 and M_5	AequoZen Frozen Cells	ES-001-AF
PhotoScreen starter kit	A_3	PhotoScreen Cell Line	AX-001-PCF

GPCR CELL LINES			
Receptor type	**Subtype**	**Product Type**	**Cat. No.**
5-Hydroxytryptamine	5-HT_{1A}	AequoScreen Cell Line	ES-310-A
	5-HT_{1A}	AequoZen Frozen Cells	ES-310-AF
	5-HT_{2A}	AequoScreen Cell Line	ES-313-A
	5-HT_{2A}	AequoZen Frozen Cells	ES-313-AF
	5-HT_{2B}	AequoScreen Cell Line	ES-314-A
	5-HT_{2C} edited isoform	AequoScreen Cell Line	ES-315-A
	5-HT_{2C} edited isoform	AequoZen Frozen Cells	ES-315-AF
	5-HT_{2C} non edited isoform	AequoScreen Cell Line	ES-318-A
	5-HT_{2C} non edited isoform	AequoZen Frozen Cells	ES-318-AF
	5-HT_{3A}	AequoScreen Cell Line	ES-402-A
	5-HT_{3A}	AequoZen Frozen Cells	ES-402-AF
	5-HT_{5A}	AequoScreen Cell Line	ES-401-A
	5-HT_{5A}	AequoZen Frozen Cells	ES-401-AF
	5-HT_6	AequoScreen Cell Line	ES-316-A
	5-HT_7	AequoZen Frozen Cells	ES-316-AF
Acetylcholine (Muscarinic)	M_1	AequoScreen Cell Line	ES-210-A
	M_1	AequoZen Frozen Cells	ES-210-AF
	M_2	AequoScreen Cell Line	ES-211-A
	M_2	AequoZen Frozen Cells	ES-211-AF
	M_3	AequoScreen Cell Line	ES-212-A
	M_3	AequoZen Frozen Cells	ES-212-AF
	M_4	AequoScreen Cell Line	ES-213-A
	M_4	AequoZen Frozen Cells	ES-213-AF
	M_5	AequoScreen Cell Line	ES-214-A
	M_5	AequoZen Frozen Cells	ES-214-AF
Adenosine	A_1	AequoScreen Cell Line	ES-010-A
	A_1	AequoZen Frozen Cells	ES-010-AF
	A_{2A}	AequoScreen Cell Line	ES-011-A
	A_{2A}	AequoZen Frozen Cells	ES-011-AF
	A_{2B}	AequoScreen Cell Line	ES-013-A
	A_3	AequoScreen Cell Line	ES-012-A
	A_3	AequoZen Frozen Cells	ES-012-AF
	A_3	PhotoScreen Cell Line	AX-001-PCF
Adrenoceptors	$alpha_{1A}$	AequoScreen Cell Line	ES-036-A
	$alpha_{1A}$	AequoZen Frozen Cells	ES-036-AF
	$alpha_{1B}$	AequoScreen Cell Line	ES-037-A
	$alpha_{1D}$	AequoScreen Cell Line	ES-038-A
	$alpha2_A$	AequoZen Frozen Cells	ES-030-AF
	$alpha_{2A}$	AequoScreen Cell Line	ES-030-A
	$alpha_{2B}$	AequoScreen Cell Line	ES-031-A
	$alpha_{2B}$	AequoZen Frozen Cells	ES-031-AF
	$alpha_{2C}$	AequoScreen Cell Line	ES-032-A
	$beta_1$	AequoScreen Cell Line	ES-033-A
	$beta_1$	AequoZen Frozen Cells	ES-033-AF
Anaphylatoxin	C3a	AequoScreen Cell Line	ES-730-A
	C5a	AequoScreen Cell Line	ES-731-A
	C5a	AequoZen Frozen Cells	ES-731-AF
Angiotensin	AT_1	AequoScreen Cell Line	ES-072-A
	AT_1	AequoZen Frozen Cells	ES-072-AF
Apelin	APJ	AequoScreen Cell Line	ES-460-A
Beta Alanine	MRGPRD, TGR7	AequoScreen Cell Line	ES-741-A
Bombesin	BB_1	AequoScreen Cell Line	ES-581-A
	BB_2	AequoScreen Cell Line	ES-582-A
	BB_3	AequoScreen Cell Line	ES-580-A
Bradykinin	B_1	AequoScreen Cell Line	ES-091-A
	B_1 (rat)	AequoScreen Cell Line	ES-092-A
	B_2	AequoScreen Cell Line	ES-090-A
Calcitonin	AM_2	AequoScreen Cell Line	ES-430-A
	$CGRP_1$	AequoScreen Cell Line	ES-420-A
	$CGRP_1$	AequoZen Frozen Cells	ES-420-AF
Cannabinoid	CB_1	AequoScreen Cell Line	ES-110-A
	CB_1	AequoZen Frozen Cells	ES-110-AF
Chemerin	GPR1	AequoScreen Cell Line	ES-661-A

Receptor type	Subtype	Product Type	Cat. No.
Chemerin	GPR1	AequoZen Frozen Cells	ES-661-AF
Chemokine	CCR10	AequoScreen Cell Line	ES-143-A
	CCR10	AequoZen Frozen Cells	ES-143-AF
	CCR2b	AequoScreen Cell Line	ES-133-A
	CCR2b	AequoZen Frozen Cells	ES-133-AF
	CCR3	AequoScreen Cell Line	ES-138-A
	CCR3	AequoZen Frozen Cells	ES-138-AF
	CCR6	AequoScreen Cell Line	ES-139-A
	CCR6	AequoZen Frozen Cells	ES-139-AF
	CCR7	AequoScreen Cell Line	ES-140-A
	CCR7	AequoZen Frozen Cells	ES-140-AF
	CCR8	AequoScreen Cell Line	ES-136-A
	CCR8	AequoZen Frozen Cells	ES-136-AF
	CCR9a	AequoScreen Cell Line	ES-146-A
	CCR9a	AequoZen Frozen Cells	ES-146-AF
	CX_3CR1	AequoScreen Cell Line	ES-137-A
	CX_3CR1	AequoZen Frozen Cells	ES-137-AF
	CXCR2	AequoScreen Cell Line	ES-145-A
	CXCR2	AequoZen Frozen Cells	ES-145-AF
	CXCR3	AequoScreen Cell Line	ES-142-A
	CXCR3	AequoZen Frozen Cells	ES-142-AF
	CXCR6	AequoScreen Cell Line	ES-720-A
	CXCR6	AequoZen Frozen Cells	ES-720-AF
	XCR1	AequoScreen Cell Line	ES-148-A
	XCR1	AequoZen Frozen Cells	ES-148-AF
	CCR1	AequoScreen Cell Line	ES-132-A
Cholecystokinin	CCK_1	AequoScreen Cell Line	ES-530-A
	CCK_1	AequoZen Frozen Cells	ES-530-AF
	CCK_2	AequoScreen Cell Line	ES-531-A
	CCK_2	AequoZen Frozen Cells	ES-531-AF
Corticotropin-Releasing Factor	CRF_1	AequoScreen Cell Line	ES-152-A
Dopamine	D_{2L}	AequoScreen Cell Line	ES-171-A
	D_{2L}	AequoZen Frozen Cells	ES-171-AF
Endothelin	ET_A	AequoScreen Cell Line	ES-320-A
	ET_A	AequoZen Frozen Cells	ES-320-AF
	ET_B	AequoScreen Cell Line	ES-321-A
	ET_B	AequoZen Frozen Cells	ES-321-AF
Formyl Peptide	FPRL1	AequoScreen Cell Line	ES-610-A
Free Fatty Acid	FFA1 (GPR40)	AequoScreen Cell Line	ES-652-A
	FFA1 (GPR40)	AequoZen Frozen Cells	ES-652-AF
	GPR120	AequoScreen Cell Line	ES-800-A
	GPR120	AequoZen Frozen Cells	ES-800-AF

Receptor type	Subtype	Product Type	Cat. No.
$GABA_B$	$GABA_{B1a/B2}$	AequoScreen Cell Line	ES-500-A
Galanin	GAL_1	AequoScreen Cell Line	ES-510-A
	GAL_2	AequoScreen Cell Line	ES-511-A
	GAL_2	AequoZen Frozen Cells	ES-511-AF
	GAL_2	PhotoScreen Cell Line	AX-008-PCF
Ghrelin	ghrelin	AequoScreen Cell Line	ES-410-A
	ghrelin	AequoZen Frozen Cells	ES-410-AF
Glucagon	glucagon	AequoScreen Cell Line	ES-710-A
	Secretin	AequoScreen Cell Line	ES-712-A
	Secretin	AequoZen Frozen Cells	ES-712-AF
Glycoprotein Hormone	TSH	AequoScreen Cell Line	ES-790-A
Gonadotropin-Releasing Hormone	GnRH	AequoScreen Cell Line	ES-600-A
Histamine	H_1	AequoScreen Cell Line	ES-390-A
	H_1	AequoZen Frozen Cells	ES-390-AF
	H_2	AequoScreen Cell Line	ES-391-A
	H_2	AequoZen Frozen Cells	ES-391-AF
	H_3	AequoScreen Cell Line	ES-392-A
	H_3	AequoZen Frozen Cells	ES-392-AF
	H_4	AequoScreen Cell Line	ES-393-A
	H_4	AequoZen Frozen Cells	ES-393-AF
KiSS1 (Metastin)	KISS1 (GPR54)	AequoScreen Cell Line	ES-630-A
Leukotriene	BLT_1 (LTB4R1)	AequoScreen Cell Line	ES-340-A
	CysLT1	AequoScreen Cell Line	ES-470-A
	OXE (HM74-like)	AequoScreen Cell Line	ES-640-A
Lysophospholipid	S_1P_2 (EDG5)	AequoScreen Cell Line	ES-594-A
	S_1P_2 (EDG5)	AequoZen Frozen Cells	ES-594-AF
	S_1P_4 (EDG6)	AequoScreen Cell Line	ES-592-A
	S_1P_4 (EDG6)	AequoZen Frozen Cells	ES-592-AF
	S_1P_5 (EDG8)	AequoScreen Cell Line	ES-593-A
	S_1P_5 (EDG8)	AequoZen Frozen Cells	ES-593-AF
Mas related	MrgX1	AequoScreen Cell Line	ES-740-A
	MrgX2	AequoScreen Cell Line	ES-742-A
Melanin-Concentrating Hormone	MCH_1	AequoScreen Cell Line	ES-370-A
	MCH_1	AequoZen Frozen Cells	ES-370-AF
	MCH_2	AequoScreen Cell Line	ES-371-A
	MCH_2	AequoZen Frozen Cells	ES-371-AF
Melanocortin	MC_4	AequoScreen Cell Line	ES-191-A
	MC_4	AequoZen Frozen Cells	ES-191-AF
Melatonin	MT_1	AequoScreen Cell Line	ES-620-A
	MT_2	AequoScreen Cell Line	ES-621-A
	MT_2	AequoZen Frozen Cells	ES-621-AF
Motilin	motilin	AequoScreen Cell Line	ES-380-A

Receptor type	Subtype	Product Type	Cat. No.
Neurokinin	NK_2	AequoScreen Cell Line	ES-251-A
	NK_3	AequoScreen Cell Line	ES-252-A
Neuromedin U	NMU1	AequoScreen Cell Line	ES-450-A
	NMU2	AequoScreen Cell Line	ES-451-A
Neuropeptide FF	NPFF2	AequoScreen Cell Line	ES-490-A
Neuropeptide S	NPS	AequoScreen Cell Line	ES-770-A
Neuropeptide Y	Y_1	AequoScreen Cell Line	ES-351-A
	Y_2	AequoScreen Cell Line	ES-352-A
	Y_2	AequoZen Frozen Cells	ES-352-AF
Neurotensin	NTS_1	AequoScreen Cell Line	ES-690-A
	NTS_1	AequoZen Frozen Cells	ES-690-AF
Nicotinic	GPR109A (HM74A)	AequoScreen Cell Line	ES-760-A
Opioid	kappa	AequoScreen Cell Line	ES-541-A
	mu	AequoScreen Cell Line	ES-542-A
	mu	AequoZen Frozen Cells	ES-542-AF
	NOP (ORL1)	AequoScreen Cell Line	ES-230-A
Orexin	OX_1	AequoScreen Cell Line	ES-330-A
	OX_1	AequoZen Frozen Cells	ES-330-AF
	OX_2	AequoScreen Cell Line	ES-331-A
	OX_2	AequoZen Frozen Cells	ES-331-AF
Oxoglutarate Receptor	OXGR1 (GPR99, Citric acid cycle)	AequoScreen Cell Line	ES-743-A
	OXGR1 (GPR99, Citric acid cycle)	AequoZen Frozen Cells	ES-743-AF
Peptide P518	QRFP (OX_2-like, GPR103)	AequoScreen Cell Line	ES-670-A
Prokinecitin	PKR_1	AequoScreen Cell Line	ES-750-A
	PKR_1	AequoZen Frozen Cells	ES-750-AF
	PKR_2	AequoScreen Cell Line	ES-751-A
Prolactin Releasing Peptide	PRRP	AequoScreen Cell Line	ES-480-A
Prostanoid	DP_1	AequoScreen Cell Line	ES-560-A
	DP_2 (CRTH2)	AequoScreen Cell Line	ES-561-A
Protease-activated	PAR2	AequoScreen Cell Line	ES-780-A
	PAR4	AequoScreen Cell Line	ES-782-A
	PAR4	AequoZen Frozen Cells	ES-782-AF
Purinergic	$P2Y_{11}$	AequoScreen Cell Line	ES-293-A
	$P2Y_{11}$	AequoZen Frozen Cells	ES-293-AF
Relaxin	RXFP3	AequoScreen Cell Line	ES-656-A
	RXFP4	AequoScreen Cell Line	ES-659-A

Receptor type	Subtype	Product Type	Cat. No.
Somatostatin	sst_{2a}	AequoScreen Cell Line	ES-521-A
	sst_4	AequoZen Frozen Cells	ES-524-AF
	sst_4	AequoScreen Cell Line	ES-524-A
	sst_5	AequoScreen Cell Line	ES-522-A
Succinate	SUCNR1 (GPR91)	AequoZen Frozen Cells	ES-744-AF
	SUCNR1 (GPR91)	AequoScreen Cell Line	ES-744-A
Thyrotropin Releasing Hormone	TRH_1	AequoScreen Cell Line	ES-700-A
	TRH_1	AequoZen Frozen Cells	ES-700-AF
Urotensin	(Uro II, GPR 14) -rat	AequoScreen Cell Line	ES-441-A
	(Uro II, GPR 14) -rat	AequoZen Frozen Cells	ES-441-AF
	UT (Uro II, GPR14)	AequoScreen Cell Line	ES-440-A
Vasoactive Intestinal Peptide	PAC_1 (PACAP)	AequoScreen Cell Line	ES-272-A
	$VPAC_1$ (VIP)	AequoScreen Cell Line	ES-273-A
	$VPAC_2$	AequoScreen Cell Line	ES-274-A
Vasopressin	V_{1A}	AequoScreen Cell Line	ES-361-A
	V_{1A}	AequoZen Frozen Cells	ES-361-AF
	V_{1B}	AequoScreen Cell Line	ES-362-A
	V_2	AequoScreen Cell Line	ES-363-A
Ion Channel Cell Lines			
5-Hydroxytryptamine	$5\text{-}HT_{3A}$	AequoScreen Cell Line	ES-402-A
	$5\text{-}HT_{3A}$	AequoZen Frozen Cells	ES-402-AF
Transient receptor potential	TRPA1	PhotoScreen Cell Line	AX-004-PCL
Parental cell lines			
Parental cell lines	1321N1	AequoScreen	ES-000-A27
	1321N1 $G\alpha_{16}$	AequoScreen	ES-000-A28
	CHO-K1	AequoScreen	ES-000-A12
	CHO-K1 $G\alpha_{16}$	AequoScreen	ES-000-A24
	CHO-K1 $G\alpha q_{i5}$	AequoScreen	ES-000-A21
	HEK293	AequoScreen	ES-000-A30
	HEK293 $G\alpha_{16}$	AequoScreen	ES-000-A26
Parental Frozen Cells	CHO-K1	AequoZen Frozen Cells	ES-000-A12F
	CHO-K1 $G\alpha_{16}$	AequoZen Frozen Cells	ES-000-A24F
Parental cell lines			
Plasmids	$G\alpha_{16}$	AequoScreen	ES-003-AC
		AequoScreen	ES-002-AC

PerkinElmer offers a wide range of luminescence microplate readers and liquid handling solutions to suit your needs. PerkinElmer can easily automate all your luminescence applications. PerkinElmer respects the intellectual property of GPCR patents. IP-protected products may vary from country to country.

THROUGHPUT SOLUTIONS FOR EVERY NEED

PerkinElmer offers a wide range of luminescence microplate readers to suit your needs. From the the new EnSpire with ultra-sensitive luminescence for basic research and assay development, to the MicroBeta² LumiJET platform for drug discovery, PerkinElmer can easily deliver the optimum solution for all your luminescence applications.

EnSpire Multilabel Plate Reader

VICTOR *X* Light Luminescence Plate Reader

EnVision Multilabel Plate Reader

EnSpire Multilabel Plate Reader

EnSpire offers affordable detection across multiple platforms including ultra sensitive luminescence, Alpha technology and fluorescence/absorbance using quad-monochromator technology. With ultra-sensitive luminescence, you can use fewer precious cells to obtain the same robust signal as standard luminescence. Extra sensitivity compensates for low transfection assays, enhancing assay viability. The stronger signal increases your assay window, so there is no need to redesign assays. All this combined can save up to 75% in reduced transfection reagents and substrates.

EnSpire leverages EnVision's world class performance technology to deliver flexibility and sensitivity, with easy to use software, operational temperature control and bottom reading capability.

VICTOR™*X* Light Plate Reader

VICTOR *X* Light is a flexible microplate-based benchtop reader that offers considerably more sensitivity for luminescence measurement than standard readers—using either aequorin or luciferase assays. It is ideal for a variety of applications including cell-based assays, immunoassays, toxicity screens, and gene expression. Use it as a convenient stand-alone system or, with optional accessories, integrate it into robotic systems as needed. It is ideal for PerkinElmer's mix-and-measure luminescence assay technologies.

VICTOR *X* Multilabel Reader

With over 10 counting modes, multiple options, and a range of detection technologies, including luminescence, the VICTOR *X* has the right configuration for your assay needs. It can operate as a stand-alone instrument or integrate into robotic systems. This is your solution if you perform fast multi-wavelength assays in a range of microplates.

EnVision Multilabel Reader

For fast, high performance luminescence detection, consider the EnVision Multilabel Plate Reader. Offered with standard luminesence and optional ultra-sensitive luminescence, this flexible instrument includes two detectors enabling simultaneous dual wavelength reading, below emission reading, barcode readers, a high speed light source and adjustment of measurement height function. Besides luminescence, the EnVision reads all non-isotopic detection technologies, including fluorescence intensity, fluorescence polarization, time-resolved fluorescence (TRF) and absorbance, in all major applications. It's designed to be expanded as your throughput and application requirements increase. The instrument is fully field upgradable with stackers, temperature control, dispenser, and/or AlphaScreen capabilities. EnVision instruments are easily integrated into robotic systems, and accept microplates from 1- to 3456-wells.

MicroBeta² and TopCount Plate Counters

The MicroBeta² and TopCount are the most popular scintillation and luminescence counters in the world for low and medium throughput applications.

Thanks to their high speed photon counting circuitry, MicroBeta², MicroBeta² LumiJET and TopCount have best-in-class glow-type luminescence performance with linear responses in excess of 20 million CPS and backgrounds below 100 CPS. Temperature control features guarantee the optimum counting conditions for luminescence assays.

If your applications require flash luminescence, choose MicroBeta² LumiJET with a choice of single or dual channel injectors. Run dual aequorin (agonist and antagonist) screens with no crosstalk between wells for improved data accuracy and assay performance and no need of an external dispensing device. And with 1, 2, 6 or 12-detector configurations, multiple detectors can be used simultaneously to maximize your throughput in formats up to 384-well plates.

ViewLux Screening Platform

ViewLux is an ultra-high throughput microplate imager for high sensitivity and fast measurement of light from fluorescence polarization (FP), fluorescence intensity, time-resolved fluorescence (TRF), luminescence and absorbance assays.

Because the instrument reads entire plates in one exposure, throughput is not affected by plate density. Using 1536-well plates and, for example, fluorescence intensity, ViewLux allows throughputs in excess of 200,000 samples per hour under continuous operation.

The instrument supports both robot loading and batch mode operation. Up to 64 plates can be loaded for unattended operation. Users can alternate between batch and robot loading according to need.

The JANUS Automated Workstation

From compound management and sample preparation to downstream applications for drug discovery, molecular biology and clinical research, we provide innovative solutions for your automated liquid handling needs. The JANUS Automated Workstation delivers precision liquid handling and flexible pipetting capabilities for pre-dilutions and serial dilutions.

Need a more specialized automation solution? Our Integration Solutions Team stands ready to work with you to develop a custom solution that fits your needs, and our decades of experience mean we have the technical and applications expertise to completely automate your application – maximizing your efficiency and results quality.

MicroBeta² LumiJET
Plate Counter

ViewLux uHF
Microplate Imager

JANUS Automated Workstation

LUMINESCENCE INSTRUMENT QUICK REFERENCE GUIDE

		EnSpire	VICTOR *X* Light
FEATURES	Throughput Glow	Up to 50,000 samples per day	Up to 50,000 samples per day
	Throughput Flash (Aequorin and Photina)		Up to 1,000 samples per day (96-well)
	Additional/Optional read modes	Dedicated Ultra-sensitive luminescence, FI, Absorbance, Alpha technology	Dedicated Luminescence
	Temperature control	+2 °C up to 65 °C, ±0.5 °C	+2 °C to 45 °C
	Automation	Robot interface	ActiveX/COM interfaces
	Injectors	NA	1-4
	Injection volumes	NA	5–350 µL in 1 µL increments
	Shaker	Linear, Orbital & Double Orbital	Linear, Orbital & Double Orbital
	Microplate format	1-384 well plates	1-384 well plates
LUMINESCENCE APPLICATIONS	Flash		X
	Glow	X	X
	Dual	X	X
	Dual emission		X
	Aequorin		X
	Kinetics	X	X
LUMINESCENCE SPECIFICATIONS	Bottom Read	X	NA
	Detector	Low noise photo multiplier tube	Low noise photo multiplier tube
	Dynamic Range	6 logs	6 logs
	Sensitivity	ATP < 10 pM (Glow)	ATP typically < 10 pM in glow assays
		Firefly luciferase < 1 fg	ATP typically < 100 fM in flash assays
	Crosstalk	<0.02% for grey plates	< 0.02% for 96-well B&W Isoplates; < 0.02% for 384-well

DETECTION INSTRUMENT			
EnVision	ViewLux	MicroBeta^2	MicroBeta^2 LumiJET
Up to 100,000 samples per day	200,000 samples per day	Up to 100,000 samples per day	Up to 100,000 samples per day
Up to 1,200 samples per day (96-well)	N/A		Up to 9,000 samples per day (384-well), 12 detector, 30s per sample
Ultra-sensitive Luminescence option, TRF, FI, FP, Absorbance, Alpha technology	TRF, FI, FP, Absorbance	Radiometric Luminescence	Radiometric Luminescence
+2 °C to 45 °C	+0 °C to 37 °C	PMT cooling option; no temp on sample	PMT cooling option; no temp on sample
Robot loading	Robot loading	Robot loading	Robot loading
1 - 2	NA	NA	1 - 2 per detector, up to 12 detectors
2-475 µL in 1 µL increments	NA	NA	5-250 µL in 1 µL increments
Linear, Orbital & Double Orbital	NA	NA	NA
1-3456-well plate	1-3456-well plates	24- and 96 OR 96- and 384-well plates	24- and 96 OR 96- and 384-well plates
X			X
X	X	X	X
X		X	X
X			
X			X
X	X	X	X
X	X	X	X
Dedicated low noise PMT for Luminescence, 1-2 parallel PMT's for other technologies	-100 °C cooled CCD	1, 2, 6 or 12 parallel PMTs	1, 2, 6 or 12 parallel PMTs
6.5 logs	3.5 logs	5.5 logs	5.5 logs
ATP (384-well plate, 50 µL) < 10 pM	ATP (384-well plate, 50 µL) < 10 pM	ATP <10 pM (glow)	ATP <10pM (glow)
		Firefly luciferase <1 fg	Firefly luciferase <1 fg
< 0.02% (382-well)		0.002% in white 96-well OptiPlate	0.002% in white 96-well OptiPlate

APPLICATION-FOCUSED MICROPLATES

OptiPlate™: white polystyrene OptiPlate microplates provide excellent light reflection and the highest efficiency with low background for luminescence. Available in 96-well, 384-well and 1536-well formats.

ProxiPlate™: a shallow well design brings the reagent into closer proximity to the reader's detectors and increases signal. Available in 96-well, 384-well and 1536-well formats.

CulturPlate™: ideal for work with cell-based applications, providing a sterile, tissue culture treated environment with an opaque well bottom. Available in 96-well, 384-well and 1536-well formats.

ViewPlate®: optimized for work with cell-based applications providing a sterile, tissue culture treated environment with a clear well bottom for microscopic visualization or bottom reading. Available in 96-well, 384-well and 1536-well formats.

PerkinElmer microplates for every need.

Microplate	Color (Frame/Bottom)	Applications	Format (Wells)	Catalog No.	Packaging (case of)
OptiPlate	white/white	Opaque plates for general luminescence assays and suspension cell-based assays	96 384 1536	6005291 / 6005290 / 6005299 6007291 / 6007290 / 6005299 6004291 / 6004290 / 6004299	5 / 50 / 200 5 / 50 / 200 5 / 50 / 200
ProxiPlate	white/white	Opaque, shallow-well for assay miniaturization	96 384	6006291 / 6006290 / 6006299 6008281 / 6008280 / 6008289	5 / 50 / 200 5 / 50 / 200
CulturPlate	white/white	Opaque, tissue-culture treated, sterile for cell-based assays and luminescence applications	96 384 1536	6005681 /6005680 / 6005688 / 6005689 6007681 /6007680 / 6007688 / 6007689 6004681 /6004680 / 6004688 / 6004691	3 / 50 / 160 / 200* 3 / 50 / 160 / 200* 3 / 50 / 160 / 200*
ViewPlate	white/clear	Clear bottomed, tissue culture treated, sterile for cell-based luminescence applications	96 384 1536	6005263 / 6005181 6007481 / 6007480 6004481 / 6004480	3 / 50 3 / 40 2 / 40
1/2 Area Plate	white/white	Opaque plates for general assay miniaturization	96	6005561 / 6005560 / 6005568	5 / 50 / 200

*Without lids. Order lids separately.

For a complete product listing, please visit:
www.perkinelmer.com/microplates

ACCESS TO SCIENTISTS BEHIND THE TECHNOLOGY

OnPoint℠ services

Time-challenged?
Would added expertise help you advance?

When your research demands outstrip your valuable internal resources, look to PerkinElmer to provide customized solutions to meet your luminescence detection needs.

Our services are tailored, whether you need to outsource the entire assay development process, or simply get some consultative support—we can provide the level of service you need:

- Assay development
- Custom labeling services
- Custom microplate barcoding and coating
- Custom radiosynthesis
- Application/new product development
- Automation and liquid handling solutions
- System integration
- OEM partnerships

Custom GPCR cell line generation

PerkinElmer can generate stably or transiently transfected custom GPCR cell lines for your assay readout of choice, including:

- Competition and saturation ligand binding
- GTPγS binding assays
- Functional assay readout for cAMP, Inositol Phosphate, ERK phosphorylation Ca^{2+} flux using luminescence photoproteins, fluorescence or both

Ready-to-use frozen cells

We can culture and freeze cells from any of our catalog frozen cells and cell line products using an optimized protocol. They can either be supplied propagatable or irradiated to stop all replication.

- Batch QC criteria (both on EC_{50} and S/N ratio)
- Validated cells that are ready to use for cAMP or luminescence calcium testing
- Available in off-the-shelf aliquots of 10 million cells+

GPCR assay development

Our scientists can also help you with your customized binding or cellular GPCR assay using your choice of readout.

For a complete description of OnPoint services please visit:
www.perkinelmer.com/onpoint

For science. For all the possibilities.
For a better tomorrow.

At PerkinElmer, we share our customers' commitment to finding answers to the mysteries of human health. With proven expertise in reagents, assays, cellular imaging, detection systems, automation and micoplates, we offer the right combination of technologies and service to enable scientists around the world to rapidly discover new therapies.

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