AssayGenie

Luciferase Assays

Designed for gene expression analysis & drug discovery

Luciferase Reporter Assays | Cell Viability Assays

MISSION & BRAND PROMISE

THE MISSION

Our mission is to make scientists smile through innovative products, remarkable interactions with our team and our little Genies!

COLM RYAN PhD
CEO & co-founder of Assay Genie

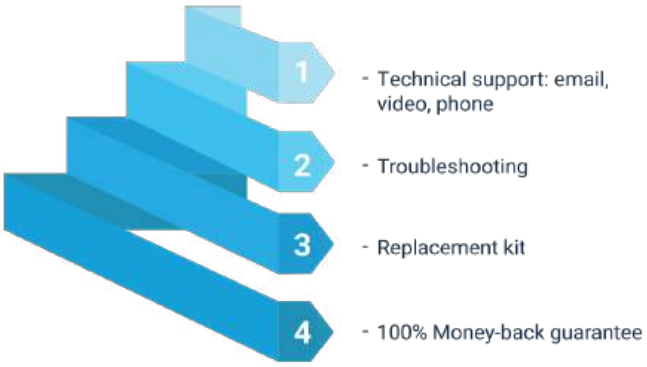
SEÁN MAC FHEARRAIGH PhD CTO & co-founder of Assay Genie

Maximum Support & Guidance

Assay Genie provides excellence in support to all our customers!

Not only do we provide you with application based support before, during and after your experiments, but on those rare occasions when problems arise, we have a defined series of customer-centric steps to ensure that you are happy with our products.

So, don't worry, we also offer a 100% money-back guarantee should our products not perform as specified.



Rapid Global Delivery

Whether you are served by one of our trusted local distributors or are part of our direct sales network, we endeavour to ship your products to you on-time, every time!

Contact us 24/7 on www.info@assaygenie.com to find our shipping times to your laboratory.

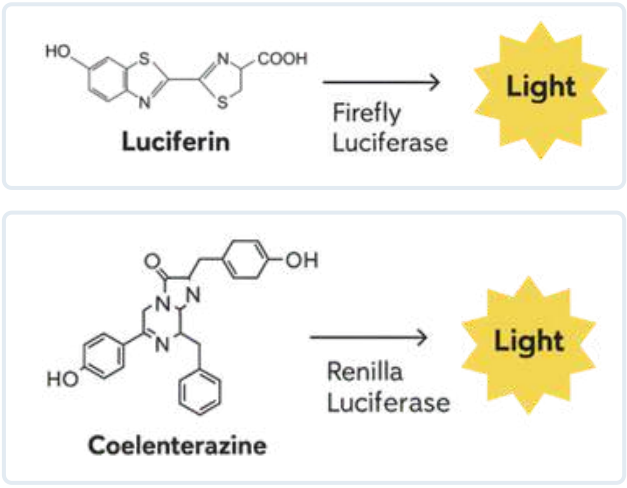
LUCIFERASE ASSAYS

Overview

Assay Genie Luciferase Assays are specialized bioluminescence tools designed to measure gene expression, promoter activity, and cell viability with high sensitivity. They utilize luciferase enzymes (commonly Firefly or Renilla) that emit light through the oxidation of luciferin, allowing researchers to quantify biological processes in real time.

Key Features

- **Homogeneous reaction:** No-wash, no pre-lysis
- **Fast Detection**: The luminescence signal is ready for measurement quickly
- **Ultra-high Sensitivity:** High signal intensity with a reliable half-life period
- **Reduced Interference:** More stable reagent, improving precision



Applications

- Gene Expression & Promoter Activity
- Drug Discovery & Screening
- Cell Viability & Cytotoxicity Assays
- Pathway Analysis & Signal Transduction
- Protein–Protein Interactions
- Viral Infection & Replication Studies
- miRNA / Post-Transcriptional Regulation
- In Vivo Imaging (BLI)

Product Range

Luciferase Reporter Assays

Mono-Lux Luciferase Assay System
Direct lysis, 1-step, homogeneous single-reagent. 55-min half-life for routine/HTS apps.

Brite-Lux Luciferase Assay System
Direct lysis, 1-step, homogeneous. 30-min half-life and 2-min read time.

Bio-Lux Luciferase Assay System
Direct lysis, 1-step, homogeneous. With 55-min half-life, designed for bioassays & ADCC.

Stable-Lux Luciferase Assay System
Direct lysis, 1-step, homogeneous for stable reading. Ideal for routine & HTS processing.

Duo-Lux Luciferase Assay System
A simple 2-step direct lysis protocol, with no sample processing required.

Dual Luciferase Reporter Assay System
Direct lysis, 2-step protocol; results readable immediately after substrate addition.

Our high-purity luciferin is catalyzed by the thermostable luciferase in the presence of magnesium ions (Mg^{2+}), molecular oxygen (O_2), and ATP.

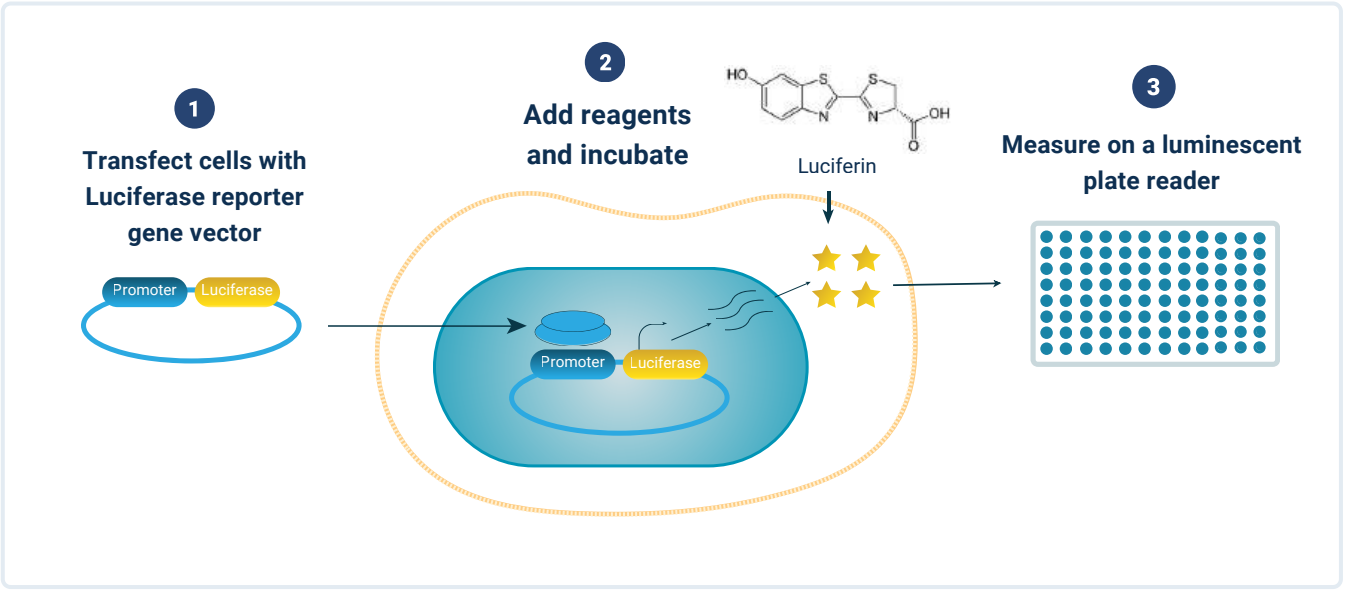


Figure 1. *Overview of Luciferase Reporter Assays.*

Product Range

Viability Assays

CellQuant-Lux 2.0 Luciferase Assay System
A simple 2-step direct lysis protocol, with no sample processing required.

CellQuant-Lux 3D Luciferase Assay System
Accurately determine the number of viable cells in complex 3D cell culture models.

Our single-reagent, "add-mix-measure" format lyses the cells and produces a luminescent signal directly proportional to ATP levels, which reflects the number of viable cells in the culture.

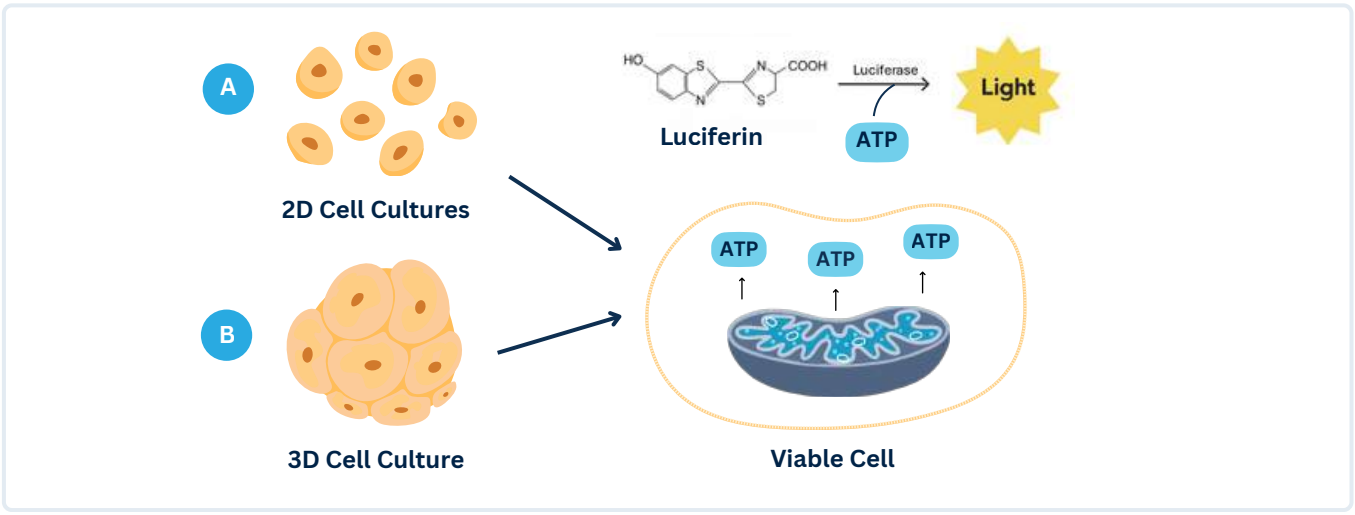


***Figure 2**. Overview of the (A) CellQuant-Lux 2.0 Luciferase Assay and (B) CellQuant-Lux 3D Luciferase Assay.*

In Vivo Imaging Assays

VivoGenie-Lux D-Luciferin In Vivo Salt
High-purity substrate for bioluminescence imaging (BLI) in live organisms.

D-Luciferin Potassium Salt is specifically formulated for in vivo applications, enabling the accurate detection of luciferase reporter gene expression.

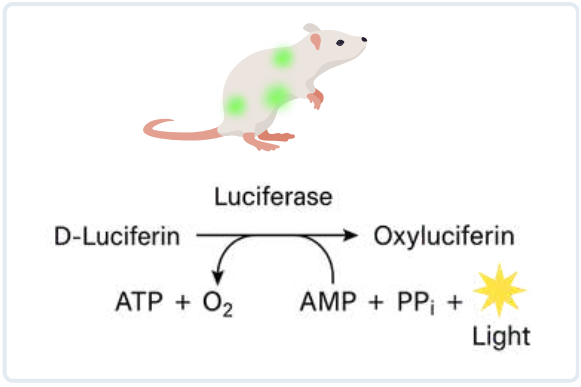


***Figure 3**. Reaction mechanism of VivoGenie-Lux D-Luciferin in presence of Luciferase.*

Superior Performance

High Stability

CellQuant-Lux 2.0 retains >80% of its luminescence signal after 9 weeks at 4°C, whereas Company P retains <35%, providing a significant practical advantage for laboratories with variable cold-chain conditions.

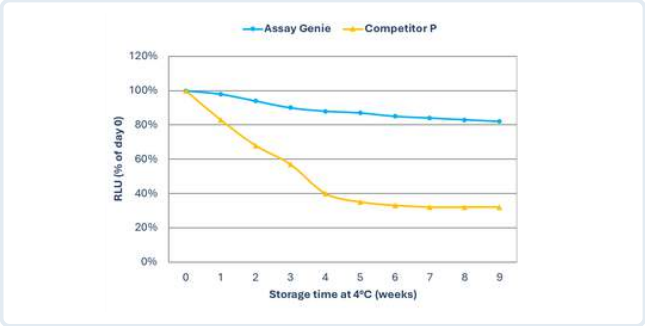


***Figure 4**. Reagent stability was assessed at 4°C and 22°C using a 2 µM ATP sample over an extended storage period.*

Freeze-Thaw

CellQuant-Lux 3D and Company P were evaluated over 10 freeze–thaw cycles. Both products exhibited comparable stability, maintaining approximately 100% of their initial luminescence signal (RLU).

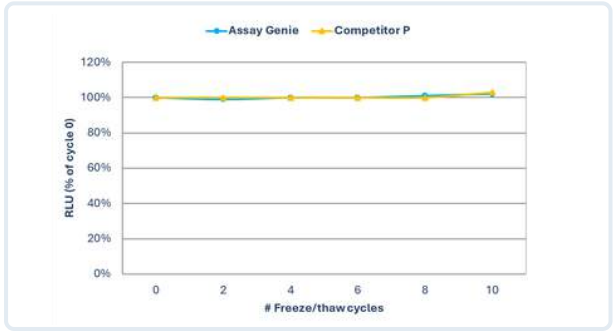


***Figure 5**. Freeze-thaw comparison experiment. 10 freeze/thaw cycles using a 2 µM ATP sample.*

Dose-Response Study with Brite-Lux Luciferase Assay

Jurkat cells were treated with PMA (10^{-10}–10^{-4} g/mL) in the presence of ionomycin. Luciferase activity was measured after 6 hours. The EC50 values were highly comparable, demonstrating that both reagents detect PMA-induced responses with similar sensitivity.

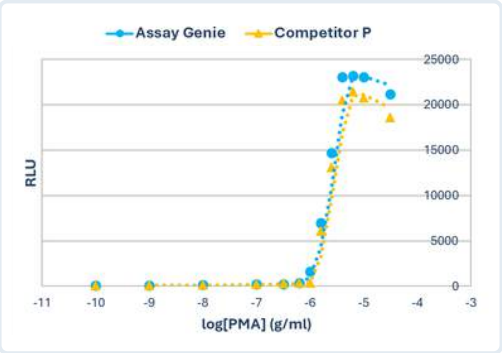


***Figure 6**. Luciferase signal detection in Jurkat cells after co-stimulation.*

***Table 1.** Fold-induction values and calculated EC50 values obtained in Jurkat cells using Assay Genie and Company P assays.*

	Fold Induction	EC50 (µg/mL)
Assay Genie	162	3.37
Company P	194	3.46

LUCIFERASE ASSAYS

Luciferase Reporter Assays

Codes	Product Names	Size	Sample Type
ASRV00015	Mono-Lux Luciferase Assay System	10mL, 10x10mL, 100mL	Mammalian cells
ASRV00016	Brite-Lux Luciferase Assay System	10mL, 10x10mL, 100mL	Mammalian cells
ASRV00013	Bio-Lux Luciferase Assay System	10mL, 10x10mL, 100mL	Mammalian cells
ASRV00014	Stable-Lux Luciferase Assay System	10mL, 10x10mL, 100mL	Mammalian cells
ASRV00017	Duo-Lux Luciferase Assay System	10mL, 100mL	Mammalian cells
MORV0010	Dual Luciferase Reporter Assay System	100 rxns, 10x100 rxns	Mammalian cells

Cell Viability Assays

Codes	Product Names	Size	Sample Type
ASRV00012	CellQuant-Lux 3D Luciferase Assay System	10mL,100mL, 400mL	Microtissues and spheroids
ASRV00011	CellQuant-Lux 2.0 Luciferase Assay System	10mL,100mL, 400mL	Mammalian cells
ASRV00018	VivoGenie-Lux D-Luciferin In Vivo Salt	10mg, 100mg, 1g	Animals & Plants

“Used by scientists in 80+ countries”

We love feedback!

Our growth and ideas are powered by smiling scientists, so get involved in our community & conversation!

www.assaygenie.com

Assay Genie

@AssayGenie

info@assaygenie.com