

Welcome to the **third edition of our biannual Pharmas/Biotechs dedicated Newsletter.**

Partner of your projects and challenges for several years, we are pleased to introduce you to our latest innovative technologies in Drug Discovery:

PARP MoA studies, AAV detection, potency bioassays for QC lot release, new SARS-CoV-2 VLP assay variants & new R&D developments ongoing for bacterial or viral viability assessments based on PCR analysis.

Stay tuned and enjoy this summer read!

Promega's Teams

Pharmas Biotechs

Contents:

About Promega

Innovations

Connections

ABOUT PROMEGA



Our New R&D Center: the Kornberg Center

Beginning of May, the French PharmaBiotech Team visited our brand new R&D center in Madison, Wisconsin, USA. The Kornberg Center supports core product and technology developments dedicated to different domain of application including Life Science research, Drug Discovery, Genetic identity, Clinical Diagnostic, Animal Health and Watertesting. This facility incorporates energizing architectural design that bridges office and meeting spaces with advanced laboratories to foster flexibility in exploration and collaboration. The facility also integrates sustainable best practices learned from around the world that reduce energy use by 65% relative to comparable facilities. Kornberg R&D labs are designed to invent technologies to address the modern challenges of molecular biology and biochemistry. Here, scientists have ready access to lab tools and equipment that remove barriers to their work and accelerate discovery. These labs are individually equipped anticipating the kind of work required for the future of science. The Kornberg Center is just one of many facilities on the Promega Madison campus that hold full-range capability from R&D to manufacturing and global logistics.

[Read more](#)



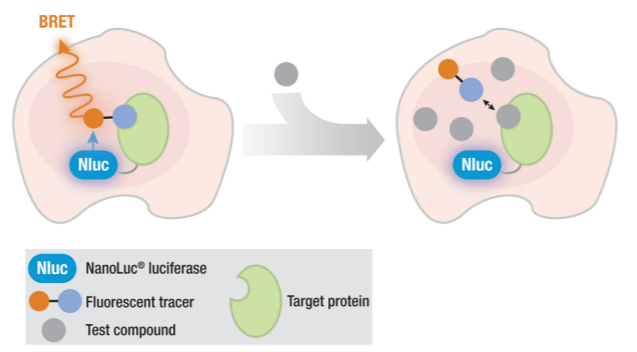
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#1 - NEWS FROM

Small Molecule Drug Discovery

NanoBRET™ TE Applied to the PARP Family

- **Measure Target Engagement in Live Cells:** Quantitative for intracellular compound affinity and fractional occupancy via direct competitive binding
- **Simple, Scalable Workflow:** Addition-only format using multi-well plates and microplate reader
- **Excellent Data Quality:** Ratiometric BRET data provides reproducibility with low error
- **Assay is Specific for Target Protein:** Distant constraints associated with BRET ensure the assay is specific for target protein fused to NanoLuc luciferase
- **Residence Time Assessment:** Use real-time measurements to determine duration of compound binding to target protein in live cells



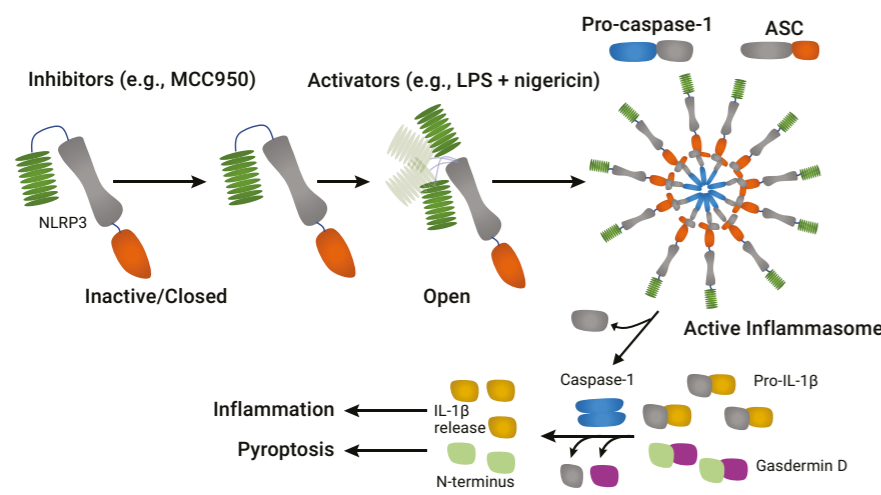
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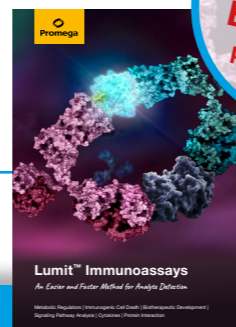
High throughput amenable, cell-based methods to support inflammasome drug discovery

- **NLRP3 Target Engagement:** live cell assay, quantitative, ratiometric & sensitive
- **Caspase-1 activity:** homogeneous, single reagent addition suitable for HTS. Can be multiplexed with cell death assays to confirm pyroptosis
- **IL-1 β release by Lumit technology:** no wash, Add-and-Read, flexible format, scalable, 70'
- ▶ Good correlation between these 3 assays: complementary methods for assessing NLRP3 inflammasome inhibitors



[Read more](#)

[Download Lumit Brochure pdf version](#)



#2 - NEWS FROM

Biologics Development

T Cell Activation Bioassay (TCR $\alpha\beta$ -KO) to assess T cell immunotherapies (TCR-T, CAR-T): Bioluminescent cell-based assays for potency assessment, antigen ranking, specificity and safety testing

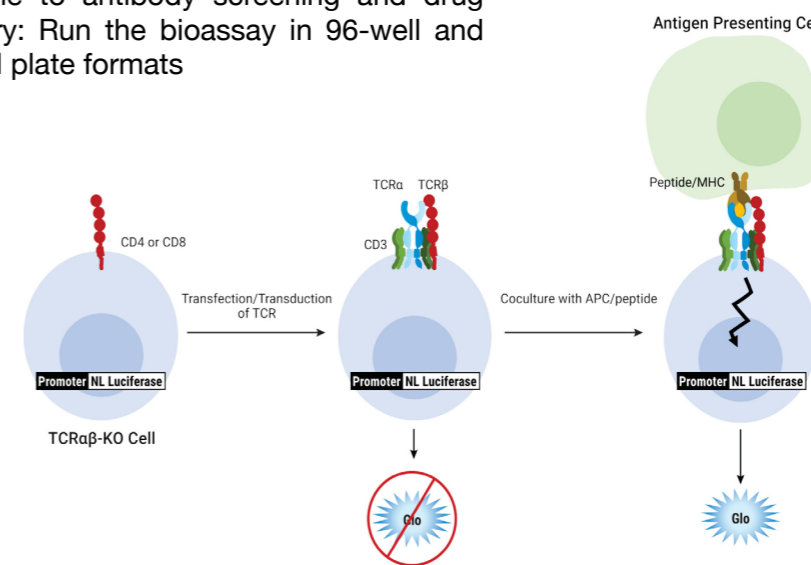
Advantages

- Prequalified according to ICH guidelines: The bioassays demonstrate the precision, accuracy and linearity required for routine use in potency and stability studies
- Simple and robust workflow: Easy to implement with no specialized skills or training required
- Amenable to antibody screening and drug discovery: Run the bioassay in 96-well and 384-well plate formats

Applications

- Determine the activity of CAR-T cell receptors
- Detect the activity and specificity of antigens
- Measure bispecific antibody potency and stability

[Read more](#)



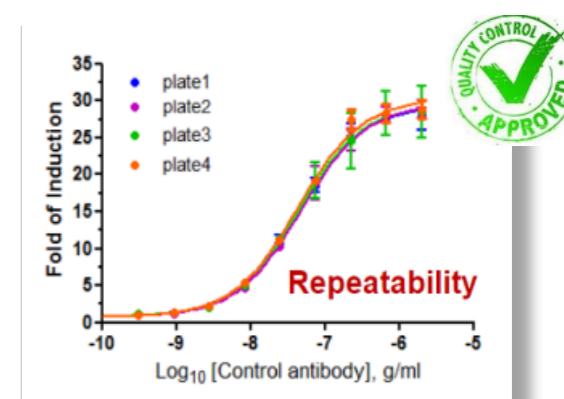
[Download poster #1](#)

[Download poster #2](#)

Bioassay qualification for QC batch release: Thaw-and-Use and Cell Propagation Model formats are produced under full Quality Control

Respect of ICH Q6B guidelines: Validation of Analytical Procedures

- Accuracy
- Precision:
 - ✓ Repeatability (intra-assay precision)
 - ✓ Intermediate precision (day to day, analyst-to-analyst)
 - ✓ Reproducibility (lab to lab)
- Specificity
- Linearity
- Range
- Robustness



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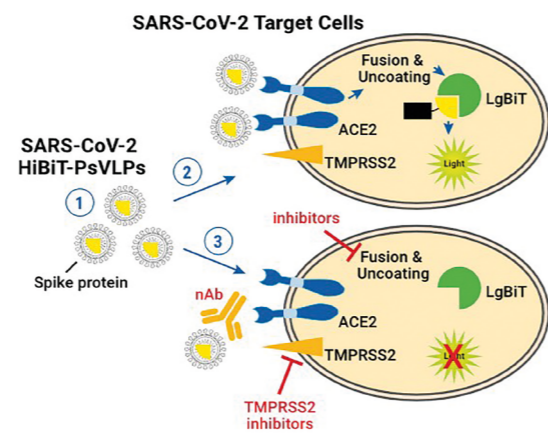


#3 - NEWS FROM

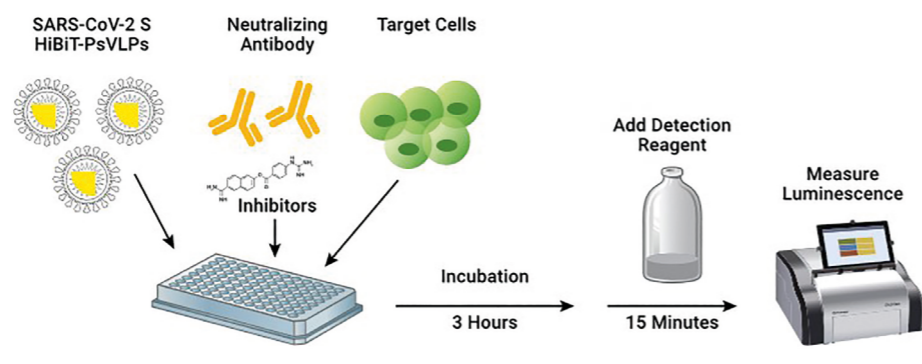
Vaccine Development

New SARS-CoV-2 HiBiT-PsVLP assays based on Bioluminescence to measure the activity of small molecule inhibitors and neutralizing antibodies that block viral entry into the host cell

- Biologically relevant & quantitative
- Reduced biosafety requirements (BSL1)
- Simpler and faster than existing bioassays - Add-mix-read format - Turnaround time ≤8 hours
- Convenience of Thaw-and-Use format - No need to generate virus or culture cells
- Can be performed for Nab screening in human sera
- **Different variants available: G614, alpha, beta, gamma, delta, omicron**



TECHNOLOGY ADAPTABLE FOR OTHER VIRAL PATHOGENS!



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[Download poster #2](#)

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Let's **TALK** CUSTOM

Need for support? Ask for custom/OEM Solutions

When one size does not fit all, and your need goes beyond a standard product size, formulation, throughput or purpose, we can help you.

When you partner with Promega, you gain access to a team of scientists and experts dedicated to supporting your success.

NEW - Custom Brochure For Sample Preparation, Amplification and Analysis



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40+ years
CUSTOM EXPERIENCE

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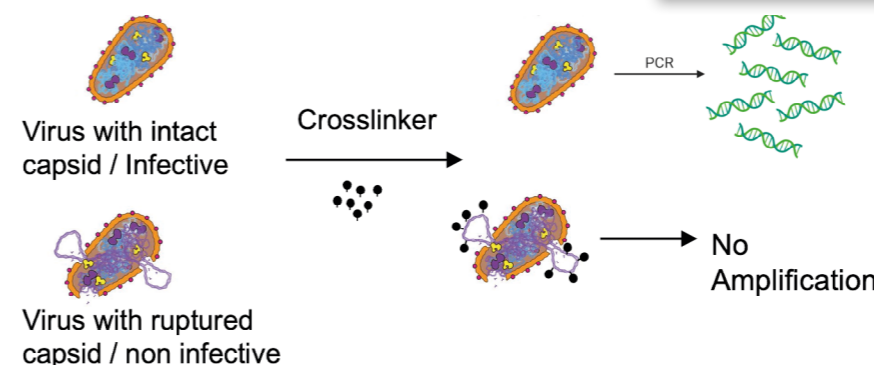
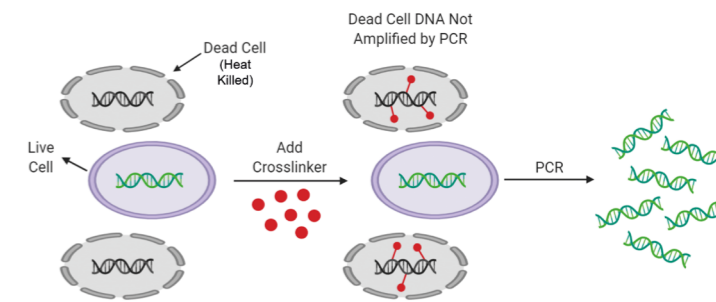
#4 - NEWS FROM

Preliminary R&D Data Proof of Concept

Bacterial viability & Viral capsid integrity by PCR

Viability PCR has broad applicability:

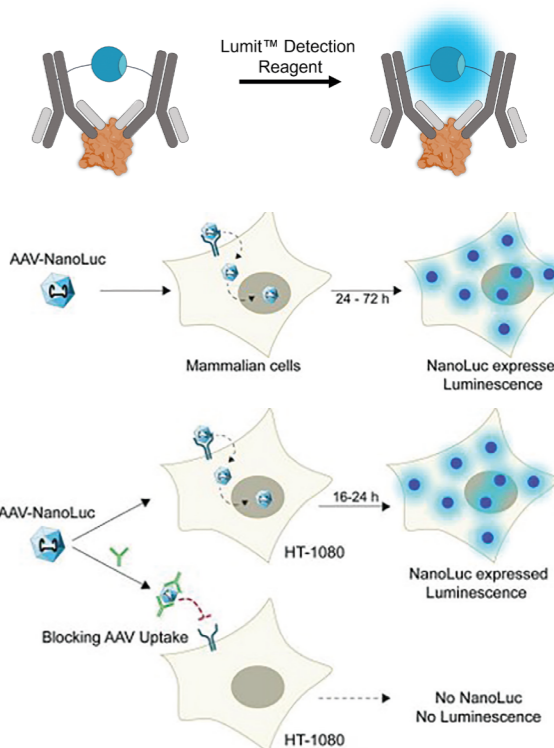
- Adding a viability component in microbiome analysis
- Content-based assays for environmental pathogens that are difficult to culture
- Viral capsid integrity assay as a surrogate for viral infectivity for gene therapy applications and virology
- Use of vPCR as a QC lot release assay for microbiome based on gene-therapy-based biotherapeutics



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Bioluminescence technologies for AAV characterization

- 1. Quantification of AAV capsid titer using Lumit**
 - Add and read format, 60 min assay
 - Broad dynamic range, improved assay precision
 - Applications: capsid titer, AAV content ratio
- 2. Measurement of AAV uptake using NanoLuc reporter**
 - Lower MOI, shorten assay time
 - Real time measurement, improved sensitivity
 - Applications: transduction efficiency, capsid engineering, tissue tropism
- 3. Detection of neutralizing antibody (Nab) against AAV**
 - Feasible, yet need to be optimized to examine matrix effects
 - Applications: pre-existing immunity to AAV



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Connections

LAST WEBINARS

Inflammasome Activation: NLRP3 Study

Martha O'Brien, Senior Research Scientist, Promega



Replay

From Cell Culture to Bioluminescence Analysis (FR)

Eppendorf / Promega - June 7, 2022 – Live



Florian Mignot, Cell Based Assay Specialist, Promega



Jérémy Schilling, Account Manager Auvergne – Rhône Alpes & Alsace, Eppendorf

Replay

Characterizing Molecular Glue Mediated Protein Degradation using Live-Cell Kinetic Methods

Agilent / Promega – July 13, 2022 – Live



Dareen Mikheil, PhD, Research Scientist, Promega



Paul Held, PhD, Applications Laboratory Manager, Cell Analysis, Agilent

Replay

American Association for Cancer Research (AACR) 2022



Replay



Ask for sample

LAST PRESS RELEASES

New licensing agreement will deliver luminescent reporter technology into iPSCs



Madison, USA (March 10, 2022) - Promega Corporation (Promega), a leader in providing innovative solutions and technical support to the life sciences industry, and FUJIFILM Cellular Dynamics, Inc., a leading global developer and manufacturer of human induced pluripotent stem cell (iPSC) technologies, today announced a strategic collaboration to advance novel assay development for drug discovery. Under a multi-year licensing agreement, FUJIFILM Cellular Dynamics will offer a wide range of custom differentiated iPSCs integrated with Promega biosensor and intracellular bioluminescent reporter capabilities for researchers and scientists to use as part of novel assay development in the drug discovery process.

Read more

Stilla and Promega Announce Co-Marketing Agreement to Offer Complete Digital PCR Workflow Solution

Boston, USA (April 06, 2022) - Stilla Technologies, the multiplex digital PCR company, and Promega Corporation today announced a co-marketing agreement that combines sample preparation with the latest Maxwell® systems and digital PCR on the six-color naica® system. With this partnership, the companies will offer an optimized workflow for a wide range of applications including liquid biopsy, sentinel pathogen testing, infectious disease assays, overall cancer research and drug discovery. Representative data of the liquid biopsy workflow will be presented at the American Association for Cancer Research (AACR) Annual Meeting 2022 on April 10, 2022.



Read more

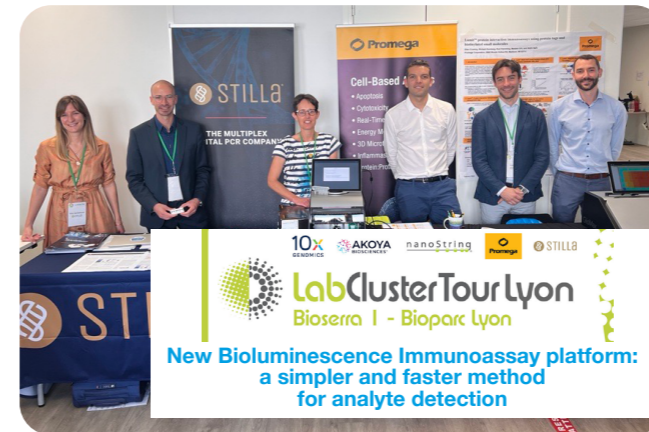
EVENTS / NETWORKS



CONGRÈS FRANCE BIOPRODUCTION 6^e édition
07 - 08 AVRIL 2022
CentraleSupélec PARIS - SACLAY



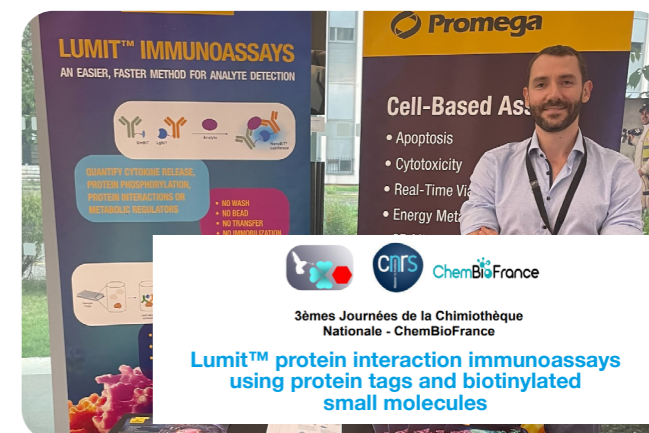
JOURNÉES POLEPHARMA DE BIOTESTING 3^e édition
01 - 02 JUIN 2022
Palais des Congrès Poitiers et région
biotesting.polepharma.com



LabCluster Tour Lyon
Bioserra I - Bioparc Lyon
New Bioluminescence Immunoassay platform: a simpler and faster method for analyte detection



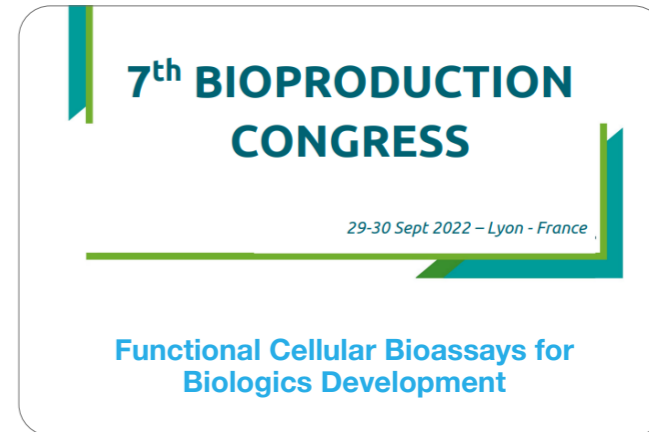
Innovative technologies for the functional study of SARS-CoV-2, dedicated to drug and vaccine development



Lumit™ protein interaction immunoassays using protein tags and biotinylated small molecules



10th AIS Antibody Industrial Symposium 2022
HiBiT: A Tiny Tag to Assess MOA-based CAR-T Cell Potency



7th BIOPRODUCTION CONGRESS

29-30 Sept 2022 - Lyon - France

Functional Cellular Bioassays for Biologics Development



immunotherapies & innovations for Infectious Diseases
6th Congress - 23 & 24 November 2022 - LYON



Information & Registration: WWW.I4ID.ORG

New psVLP neutralization assay using bioluminescence: Proof of Concept on SARS-CoV-2

Contact us

Want to learn more about our latest technologies ?
Organize a webinar, an onsite workshop or seminar ?

Need technical support ?

We are here to help !

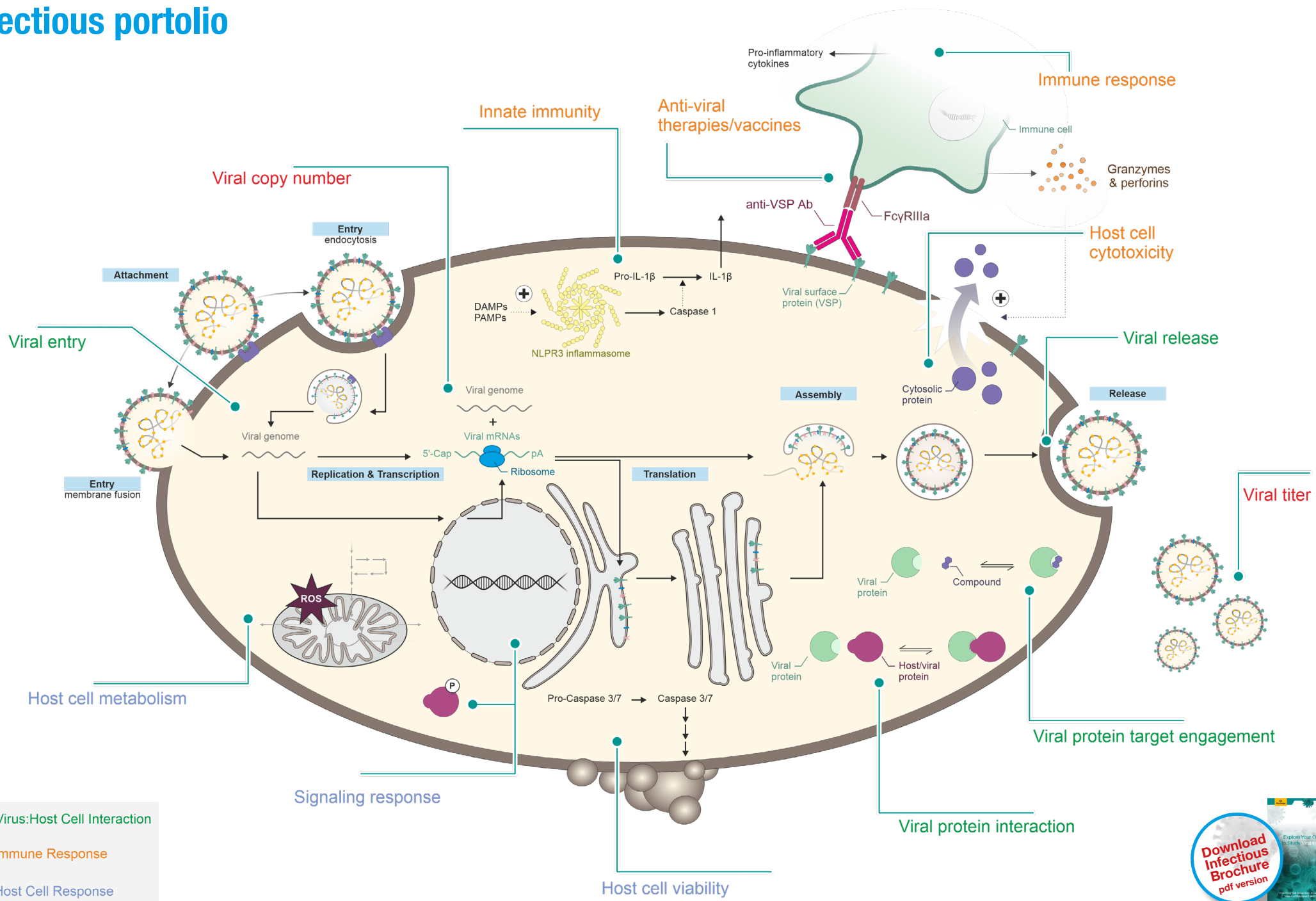
FR.support@promega.com

0 800 488 000

Or contact your local Key Account Manager



Infectious portfolio



- Virus:Host Cell Interaction
- Immune Response
- Host Cell Response
- Viral Replication

Download Infectious Brochure pdf version



NEW
Discover all the virology portfolio

Biologics Portfolio

Slide does not include Protein Characterization Tools or Cell Health Portfolio products relevant to ADCs & Oncolytic Viruses (ICD) or CDC

Fc Effector Activity

Reporter Bioassays

FcγRIIIa-V ADCC
 FcγRIIIa-F ADCC
 mFcγRIV ADCC
 mFcγRIII ADCC
 FcγRIIIa-H ADCP
 FcγRIIIa-R ADCP
 FcγRI ADCP
 THP-1 ADCP
 FcγRIIb
 CD38-KO ADCC

Target Cells

SARS-CoV-2 Spike Protein
 mTNFα
 mVEGF
 mRANKL
 PD-1
 CTLA-4

PBMC ADCC Bioassays

ADCC-Qualified PBMCs +
 Raji Cells (HaloTag-HiBIT)
 Ramos Cells (HaloTag-HiBIT)
 A549 Cells (HaloTag-HiBIT)
 SK-BR-3 Cells (HaloTag-HiBIT)
 H929 Cells (HaloTag-HiBIT)

Immunoassays

FcRn
 FcγRI
 FcγRIIA-H131, FcγRIIA-R131
 FcγRIIIA-V158, FcγRIIIA-F158

Immune Checkpoint Modulation

Reporter Bioassays

Co-Inhibitory Receptors:

PD-1/PD-L1
 mPD-1/PD-L1
 PD-1/PD-L2
 CTLA-4
 LAG-3/MHCII
 TIM-3
 TIGIT/CD155
 ICOS Blockade
 CD28 Blockade
 CD112R/CD112
 BTLA/HVEM
 CD226/CD155
 SIRPa/CD47
 LILRB2 (ILT4)

Co-Stimulatory Receptors:

GITR
 4-1BB (CD137)
 OX40
 mOX40
 CD40
 ICOS Agonist
 CD28 Agonist
 HVEM/LIGHT
 CD27
 DR3
Combinations:
 PD-1+CTLA-4
 PD-1+TIGIT
 PD-1+LAG-3
 PD-1+4-1BB, PD-1+OX40 (T&U)

Accessory Cells

FcγRIIb CHO-K1 Cells
 FcγRIIb aAPC/CHO-K1 Cells

BOLD = Catalog Product
BLACK = Early Access Material
Italics = In Development

T Cell Retargeting (Bispecific Ab, CAR/TCR Therapy)

Reporter Bioassays

T Cell Activation (NFAT)
 T Cell Activation (IL-2)
 T Cell Activation (NFκB)

TCR Knock-Out Bioassays

TCRαβ-KO (CD4+) Bioassay
 TCRαβ-KO (CD8+) Bioassay
 TCRαβ-KO (CD4+CD8+) Bioassay
 TCRαβ-KO (CD4CD8-) Bioassay
 DMF5 TCRαβ-KO (CD8+) Bioassay
 Other TCR-engineered TCRαβ-KO Bioassays

CD8+ T Cell Cytotoxicity Assays

TDCC-Qualified Primary CD8+ T Cells +

Raji Cells (HaloTag-HiBIT)
 Ramos Cells (HaloTag-HiBIT)
 A549 Cells (HaloTag-HiBIT)
 SK-BR-3 Cells (HaloTag-HiBIT)
 H929 Cells (HaloTag-HiBIT)

General Target Cell Killing

Customer Effector Cells +

K562 Cells (HaloTag-HiBIT)
 Raji Cells (HaloTag-HiBIT)
 Raji +/- CD19 Cells (LDH-HiBIT)
 Ramos Cells (HaloTag-HiBIT)
 Ramos +/- CD19 Cells (LDH-HiBIT)
 A549 Cells (HaloTag-HiBIT)
 SK-BR-3 Cells (HaloTag-HiBIT)
 U937 (HaloTag-HiBIT)
 H929 (HaloTag-HiBIT)
 OVCAR-3 (LDH-HiBIT)
 SKOV3 (LDH-HiBIT)
 SARS-CoV-2 Spike Protein (HaloTag-HiBIT)
 T2 (LDH-HiBIT)

Immunoassays

IL-2, IFNγ, other cytokines

Cytokine, Growth Factor & Other Target Modulation

Reporter Bioassays

IL-1
 IL-2
 IL-2Rβγ
 IL-4
 IL-6
 IL-7
 IL-10
 IL-12
 IL-13
 IL-15
 IL-17
 IL-21
 IL-22
 IL-23
 VEGF
 BCMA
 TGF-β
 RANKL
 TPO Receptor (Nplate)
 TLR (1, 2, 4, 5, 6, 7, 8)

Reporter Cell Lines

TNFα
 IFNα/IFNβ, IFNγ
 EPO
 GM-CSF
 EGF
 G-CSF
 ARE-luc2P/NCI-H292

HiBiT PsVLP Bioassays

SARS-CoV-2

G614
 Delta
 Omicron
 Inquire within for additional assays

Updated: March 2022