Promega

N° 4 - Jan 2023

news

Pharmas Biotechs

Welcome to the fourth edition of the biannual Newsletter dedicated to Pharmas/ Biotechs.
Partner of your projects and challenges for several years, please find here our newest technologies: *Lumit™ Immunoassay technology for phospho-protein levels, Organoid applications for Cell Health Assays, NanoLuc In Vivo Imaging, Tools portfolio available for QC batch release of Biodrugs or vaccines, Custom capabilities, New SARS-CoV-2 PsVLP assay variants & New R&D developments for HiBiT Delivery Assay - Live-cell measurement.*
Stay connected! And enjoy the winter read! Promega's Teams

Contents:

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ABOUT PROMEGA

Discover our Manufacturing Center: the Feynman Center

Named for Nobel Prize winning physicist Richard Feynman, is a 24 340m² facility primarily devoted to cGMP manufacturing of molecular biology reagents for In Vitro Diagnostic assays. Built in 2014, the space accommodates large-, medium- and small-scale bulk formulation, including the manufacture of DNA purification reagents, as well as product dispensing, and automated and manual kit packaging. Feynman also houses Quality Control labs and Document Control.
From simple changes in product size or packaging to development of custom assays and high-throughput solutions, our custom offerings cover a breadth of capabilities in manufacturing, technology development, assay automation and inventory management.
When you partner with Promega you gain access to a team of scientists and experts dedicated to supporting your success. We are here to collaborate with you to create the solution that you need.

Read more

Innovations

#1 - NEWS FROM Small Molecule Drug Discovery

Lumit™ Immunoassay Cellular Systems – Complete Assays

No-wash bioluminescent immunoassay for Fast Quantification of Phosphorylated or Total Protein:

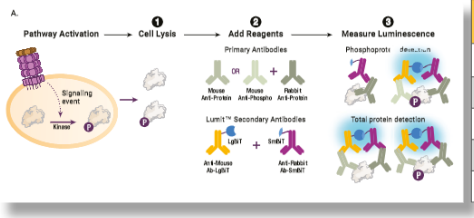
COMING SOON

- Homogeneous and simple (add and read only, no wash formats)
- Low sample volume (5-25µl)
- Sensitive assays with wide dynamic range
- Fast Incubation and Detection times (90-120 min)
- No special equipment required (luminometer)
- Amenable to high throughput applications

Download Lumit Brochure pdf version

Product

Lumit™ Video



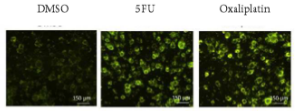
Description	Components	Size (Assays)	CS#
Lumit™ pERK (Thr202) Immunoassay Cellular System	Lumit pERK (Thr202) Antibodies Lumit Immunoassay Cellular System, Set 1	100 1,000	CS3397A03 CS3397A04
Lumit™ pAKT (Ser473) Immunoassay Cellular System	Lumit pAKT (Ser473) Antibodies Lumit Immunoassay Cellular System, Set 1	100 1,000	CS3397A07 CS3397A08
Lumit™ pSTAT3 (Tyr705) Immunoassay Cellular System	Lumit pSTAT3 (Tyr705) Antibodies Lumit Immunoassay Cellular System, Set 1	100 1,000	CS3397A11 CS3397A12
Lumit™ pIκBα (Ser32) Immunoassay Cellular System	Lumit pIκBα (Ser32) Antibodies Lumit Immunoassay Cellular System, Set 1	100 1,000	CS3397A15 CS3397A16
Lumit™ pBTK (Tyr223) Immunoassay Cellular System	Lumit pBTK (Tyr223) Antibodies Lumit Immunoassay Cellular System, Set 1	100 1,000	CS3397A19 CS3397A20

Organoid Applications for Cell Health Assays

Combining biologically relevant cell culture models with user-friendly and sensitive assay systems will yield rapid, cost-effective, and predictive research results:

- Monitoring of viability/cytotoxicity changes with Cell Health Solutions optimized for advanced 3D in vitro cell culture systems
- Confirming Apoptosis
- Real-time tracking possible
- Multiplexing options
- Compatible with Matrigel

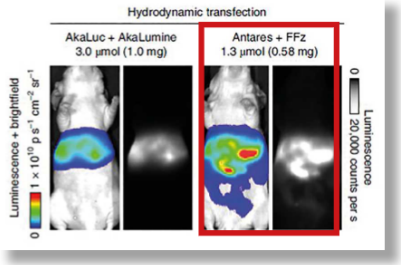
Download poster



CellToxTM Green - Organoid Data

NanoLuc In Vivo Imaging

The **Nano-Glo® In Vivo Substrate (FFz)**, is an optimized reagent designed specifically for in vivo detection of NanoLuc® Luciferase, NanoLuc® fusion proteins, or reconstituted NanoBiT® Luciferase.
This aqueous soluble reagent provides increased substrate bioavailability in vivo, leading to bright signals, and has handling requirements compatible with in vivo workflows (IV or IP substrate delivery).

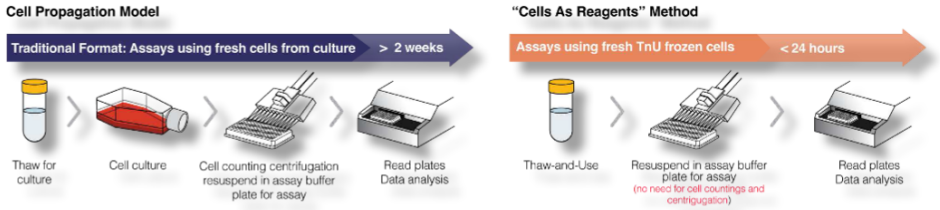


Slide Deck

#2 - NEWS FROM Biologics Development & QC batch release

Tools portfolio available for QC batch release of Biodrugs or vaccines

- Genomic Reagents to support your nucleic acid production & extraction/purification
- Cell Health Solutions to monitor cell viability/cytotoxicity during Bioproduction
- Bioanalytical tools for antibody purification, internalization and Mass Spectrometry analysis of your biologics
  Broader functional Cell-based Bioassays portfolio to support your potency QC: *Thaw-and-Use and Cell Propagation Model formats are produced under full Quality Control (under ICH Q6B guidelines).*



Custom TRS capabilities for Biologics Assay Development and Services

Including new assay development, modification of existing assays, bioassay optimization and qualification, biologic drug profiling and custom cell manufacturing.

Read more

Speed up your workflow and improve your clients' drug discovery and development using industry-leading Promega technologies!

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40+ years CUSTOM EXPERIENCE

15 ISO CERTIFIED Locations

ISO 13485 &9001

Manufacturing and Quality Systems

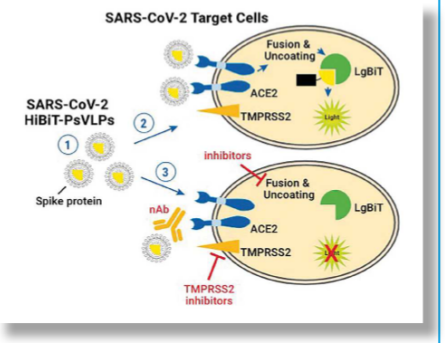
Promega functional bioassays and protein characterization products are manufactured in our global state-of-the-art facilities.
Over 450,000 square feet of environmentally controlled manufacturing spaces allow flexible bulk manufacture with capabilities for custom automated or semi-automated filling and packaging. We are prepared to accommodate your needs; from bulk production through final product finishing.

Custom Products and Technologies

#3 - NEWS FROM

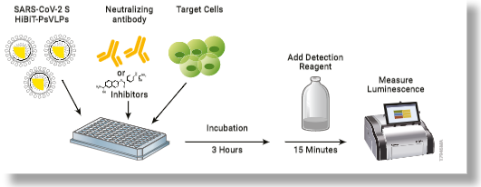
Vaccine Development

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



Advantages:

1. Increased biosafety (BSL-1):
   - PsVLPs are non-replicating and lack viral nucleic acid
2. Simple and rapid:
   - Add-mix-read protocol with short TAT (<5 hours)
   - Monitor viral entry in live cells
3. Convenient:
   - Available in Thaw-and-Use kit format
   - No need to generate virus or culture cells
4. Quantitative assay readout



Technology Adaptable For Other Viral Target!
some tools already available for Ebola

Different variants available enables comparison of SARS-CoV-2 variants: G614, alpha, beta, gamma, delta, omicron

Product	Kit size	Part #
Ready to order HiBiT-PsVLPs		
SARS-CoV-2 S(G614) HiBiT-PsVLPs	1X 5X	CS329501 CS329502
SARS-CoV-2 S(Delta) HiBiT-PsVLPs	1X 5X	CS329509 CS329510
SARS-CoV-2 S(Omicron) HiBiT-PsVLPs	1X 5X	CS329533 CS329534
SARS-CoV-2 S(Omicron BA.4/5) HiBiT-PsVLPs	1X 5X	CS329537 CS329538
VSV-G HiBiT-PsVLPs (Control)	1X 5X	CS329517 CS329518
Ready to order HiBiT-PsVLPs		
SARS-CoV-2 S(Alpha) HiBiT-PsVLPs	1X 5X	CS329503 CS329504
SARS-CoV-2 S(Beta) HiBiT-PsVLPs	1X 5X	CS329505 CS329506
SARS-CoV-2 S(Gamma) HiBiT-PsVLPs	1X 5X	CS329507 CS329508
SARS-CoV-2 S(Epsilon) HiBiT-PsVLPs	1X 5X	CS329511 CS329512
SARS-CoV-2 S(Iota) HiBiT-PsVLPs	1X 5X	CS329513 CS329514
SARS-CoV-2 S(Kappa) HiBiT-PsVLPs	1X 5X	CS329515 CS329516
SARS-CoV-2 S(Lambda) HiBiT-PsVLPs	1X 5X	CS329535 CS329536

SARS-CoV-2 S(Omicron BA.4/5) HiBiT-PsVLPs Now Available!

Download poster

Read more

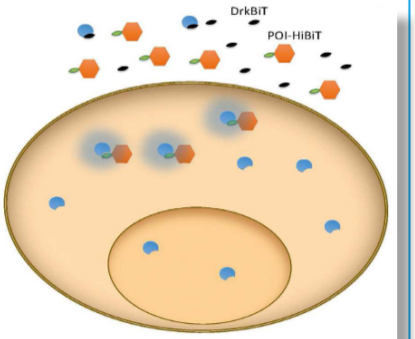
#4 - NEWS FROM

Preliminary R&D Data Proof of Concept

HiBiT Delivery Assay: Live-cell measurement of internalization of HiBiT-tagged molecules into the cytosol of LgBiT-expression cells:

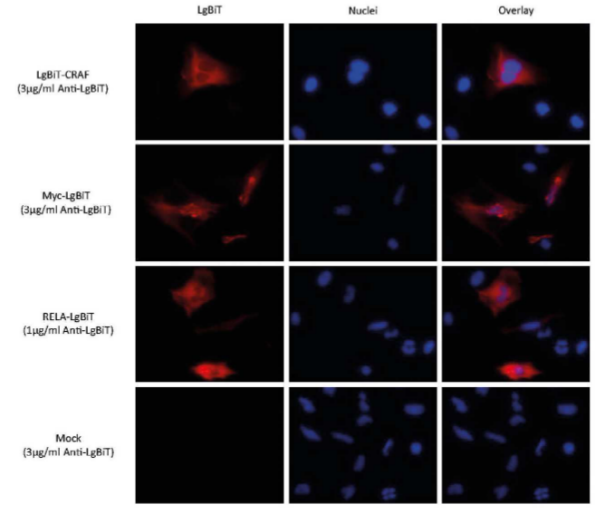
Measure rate of POI-HiBiT delivery to cystosol in real time

1. LgBiT subunit is expressed in the target cell
2. Incubate a HiBiT-tagged protein or peptide with cells and allow it to internalize
3. LgBiT inside cell binds HiBiT to reconstitute NanoBiT enzyme
4. Use washes and/or DrkBiT peptide to inhibit extracellular NanoBiT complex
5. Add Nano -Glo® Live Cell Reagent and read with a luminometer



Concept can be adapted for all entities (proteins, peptides, oligos, virus, other pathogens…) and applications!

Immuno-Fluorescence analysis possible using anti-Hibit and/or anti-LgBit antibodies to track **protein translocation** in living cells (PoC ongoing on different targets).



Immuno fluorescence detection of LgBiT fusion proteins expressed in HeLa cells.

Download product application

Request a meeting with R&D

Connections

LAST WEBINARS

From Cell Culture to Bioluminescence Analysis (FR)

Eppendorf / Promega - Dec. 1st, 2022 – Replay

Florian Mignot, Cell Based Assay Specialist, **Promega**

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

Replay

Accelerate your PCR with high quality results (FR)

Eppendorf / Promega - Oct. 18, 2022 – Replay

Emmanuelle Killian, Genomics and Sequencing Product Manager**, Promega**

David Gaertner, Product Marketing Manager Europe, **Eppendorf**

Replay

Bioanalytical Tools for Biosimilar Development

Promega – Aug. 10, 2022 – Replay

Jeff Nelson PhD, Biologics Product Manager**, Promega Corporation**

Replay

Resetting Expectations for CAR-T Potency Assessment – A Novel Target Cell Killing-Based Approach

Precision Biosciences / Promega - Oct. 5, 2022 – Replay

Jeff Nelson PhD, Biologics Product Manager**, Promega Corporation**

Avinash Chinthala, Scientist, CMC Analytical Development, **Precision Biosciences**

Replay

Keeping it Real: Why P450 Assays are Required to Predict Human Drug Responses Using Liver-on-a-Chip

CN-Bio / Promega – Oct. 11, 2022 – Replay

Darren Heywood, PhD, Product Manager, Cell Health, **Promega UK**

Atefeh Mobasseri, PhD, Field Application Scientist, **CN-Bio**

Replay

Lumit Technology forum: Simplify your workflow and yield faster results!

Promega – Nov. 8, 2022 – Replay

Vincent Van Hée PhD, Client Support Specialist**, Promega**

Replay

EVENTS / NETWORKS

... And more soon! Stay connected! ...

LAST NEWS

10 years of NanoLuc!

NanoLuc® Luciferase is a tiny, luminous reporter enzyme that has transformed the face of molecular biology in the ten years since its discovery. Derived from a species of deep-sea shrimp and 100 times brighter than firefly luciferase, the possibilities of NanoLuc® are seemingly endless. Learn more about the vast range of capabilities for this little enzyme: https://lnkd.in/guG4xT_Q
Here are some citations using HiBiT technology in neuroscience:

Institution	Tittle
Gifu Pharmaceutical University, Japan	Partial reduced Pi transport function of PiT-2 might not be sufficient to induce brain calcification of idiopathic basal ganglia calcification. https://doi.org/10.1038/s41598-019-53401-0
Gifu Pharmaceutical University, Japan	SLC20A2 variants cause dysfunctional phosphate transport activity in endothelial cells induced from Idiopathic Basal Ganglia Calcification patients-derived iPSCs. https://doi.org/10.1016/j.bbrc.2019.01.096
University of Iowa, USA	Regions of MRAP2 required for the inhibition of orexin and prokineticin receptor signaling
University of Regensburg, Germany	Chronic oxytocin-driven alternative splicing of Crfr2a induces anxiety. https://doi.org/10.1038/s41380-021-01141-x
Luxembourg Institute of Health	The atypical chemokine receptor ACKR3/CXCR7 is a broad-spectrum scavenger for opioid peptides
University of Antwerp, Belgium	Loss of DPP6 in neurodegenerative dementia: a genetic player in the dysfunction of neuronal excitability https://doi.org/10.1007/s00401-019-01976-3
University of Pisa, Italy and University of Berlin, Germany	Non-functional trace amine-associated receptor 1 variants in patients with mental disorders
University of Berlin, Germany	Different signaling profiles of MC4R mutations with three different ligands. https://doi.org/10.3390/ijms21041224
Scripps FL	The role of orphan receptor GPR139 in neuropsychiatric behavior https://doi.org/10.1038/s41386-021-00962-2
Scripps FL and UWashington, USA	Ptchd1 mediates opioid tolerance via cholesterol-dependent effects on μ-opioid receptor trafficking https://doi.org/10.1038/s41593-022-01135-0
Abbvie (US and GmbH)	Pharmacological mTOR-inhibition facilitates clearance of AD-related tau aggregates in the mouse brain https://doi.org/10.1016/j.ejphar.2022.175301
Institute of Green BioScience and Technology, Korea	Positive Correlation between nNOS and Stress-Activated Bowel Motility Is Confirmed by In Vivo HiBiT System. https://doi.org/10.3390/cells10051028

DON'T MISS

Biolabs

In continuation of the successful partnership already established for several years between Promega Corp & Biolabs US,
Promega France is excited to share with you that we both agreed to extend this collaboration in France as a General Sponsor for the future Biolabs incubators: Spartners & Hôtel Dieu

As already observed in USA, we are convinced that this will help these Biotech companies to accelerate their R&D activities and projects.

A new Biotech Program from January 2023, a perfect program to accelerate your drug discovery.

Come and discover it at: https://france.promega.com/c/biotech-program/

- Privileged support
- Webinars & trainings, on demand
- Special first order offer -50%*
- Easier access to equipment
- Special discounts for start-up
- Support for assay & tools development

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

Portfolio

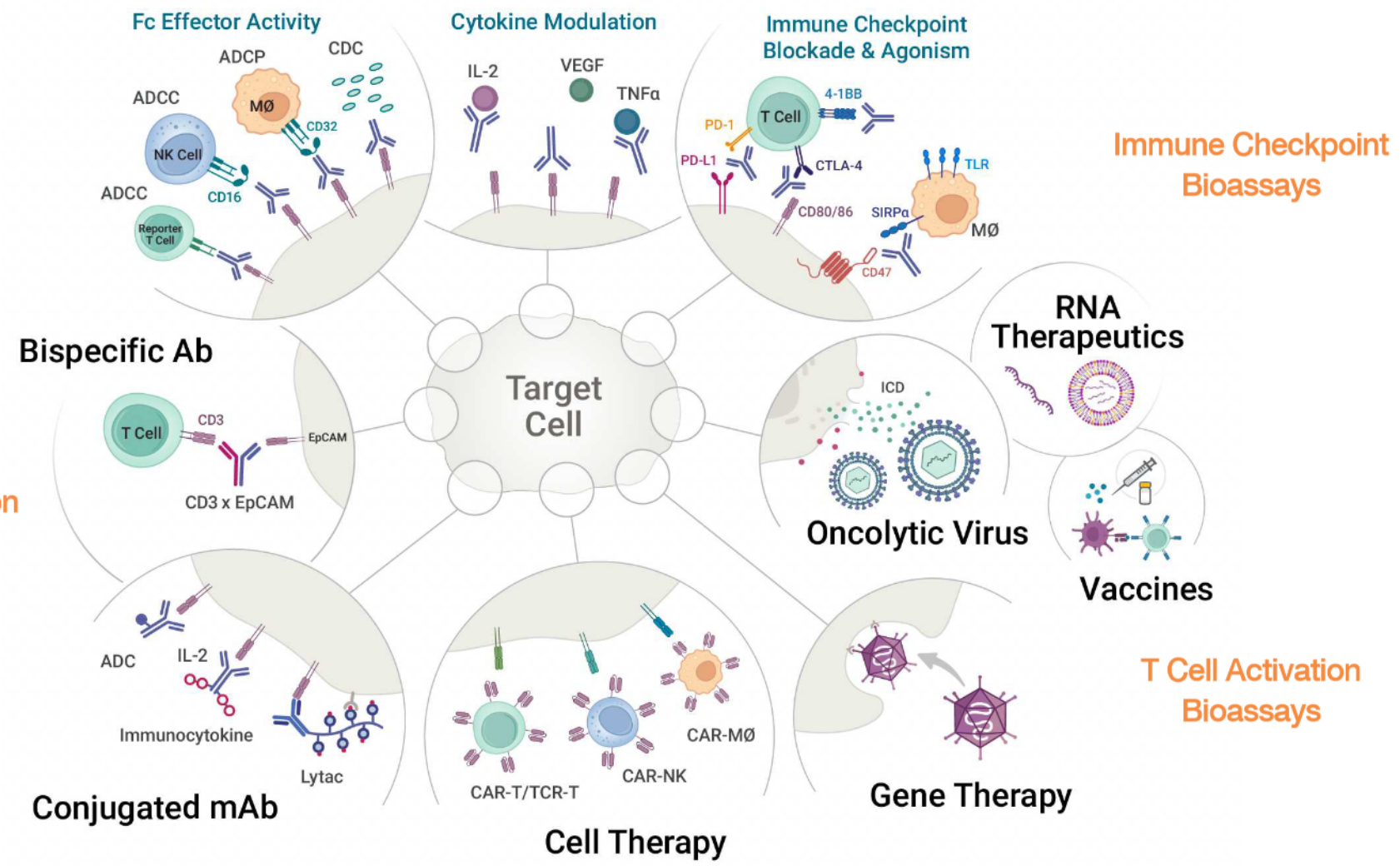
Download Bioaasays Brochure pdf version

Discover all the Biologics portfolio

Fc Effector Bioassays
Cell Health Assays

Cytokine & Growth Factor Bioassays

Monoclonal Ab



Immune Checkpoint Bioassays

T Cell Activation Bioassays

T Cell Activation Bioassays

Antiboby Internalization Assays
Cell Health Assays

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Promega

Promega Portfolio

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

Fc Effector Activity

Reporter Bioassays

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

CD38-KO ADCC

Target Cells

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

PBMC ADCC Bioassays

ADCC-Qualified PBMCs* +
- Raji Cells (HiBiT)
- Ramos Cells (HiBiT)
- A549 Cells (HiBiT)
- SK-BR-3 Cells (HiBiT)
- H929 Cells (HiBiT)

*Also sold as stand-alone

Immunoassays

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

Updated: August 2022

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
CD112R/CD112
TIGIT/CD112
CD226/CD155
ICOS Blockade
CD28 Blockade
BTLA/HVEM
SIRPα/CD47
LILRB2 (ILT4/HLA-G)
Co-Stimulatory Receptors:
GITR
4-1BB (CD137)
OX40
mOX40
CD40
ICOS Agonist
CD28 Agonist
HVEM/LIGHT
CD27
DR3
Combinations:
PD-1+TIGIT
PD-1+LAG-3, PD-1+CTLA-4
PD-1+4-1BB, PD-1+OX40 (T&U)

Accessory Cells

FcγRIIb CHO-K1 Cells
FcγRIIb aAPC/CHO-K1 Cells
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 (NFkB)

TCR Knock-Out Bioassays

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

CD8+ T Cell Cytotoxicity Assays

TDCC-Qualified Primary CD8+ T Cells +
HiBiT Target Cells (see list below)

General Target Cell Killing

Customer Effector Cells +
- K562 Cells (HiBiT)
- Raji Cells (HiBiT)
- Raji +/- CD19 Cells (HiBiT)
- Ramos Cells (HiBiT)
- Ramos +/- CD19 Cells (HiBiT)
- A549 Cells (HiBiT)
- SK-BR-3 Cells (HiBiT)
- U937 Cells (HiBiT)
- H929 Cells (HiBiT)
- OVCAR3 Cells (HiBiT)
- SKOV3 Cells (HiBiT)
- T2 Cells (HiBiT)
- SARS-CoV-2 S Protein CHO-K1 Cells (HiBiT)
- mTNFα CHO-K1 Cells (HiBiT)
- K562 Cells (HiBiT)
- CD19 K562 Cells (HiBiT)
- BCMA K562 Cells (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
VEGFR1
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 Biossays

SARS-CoV-2

G614, Delta, Omicron, additional variants
Additional viruses – please inquire

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