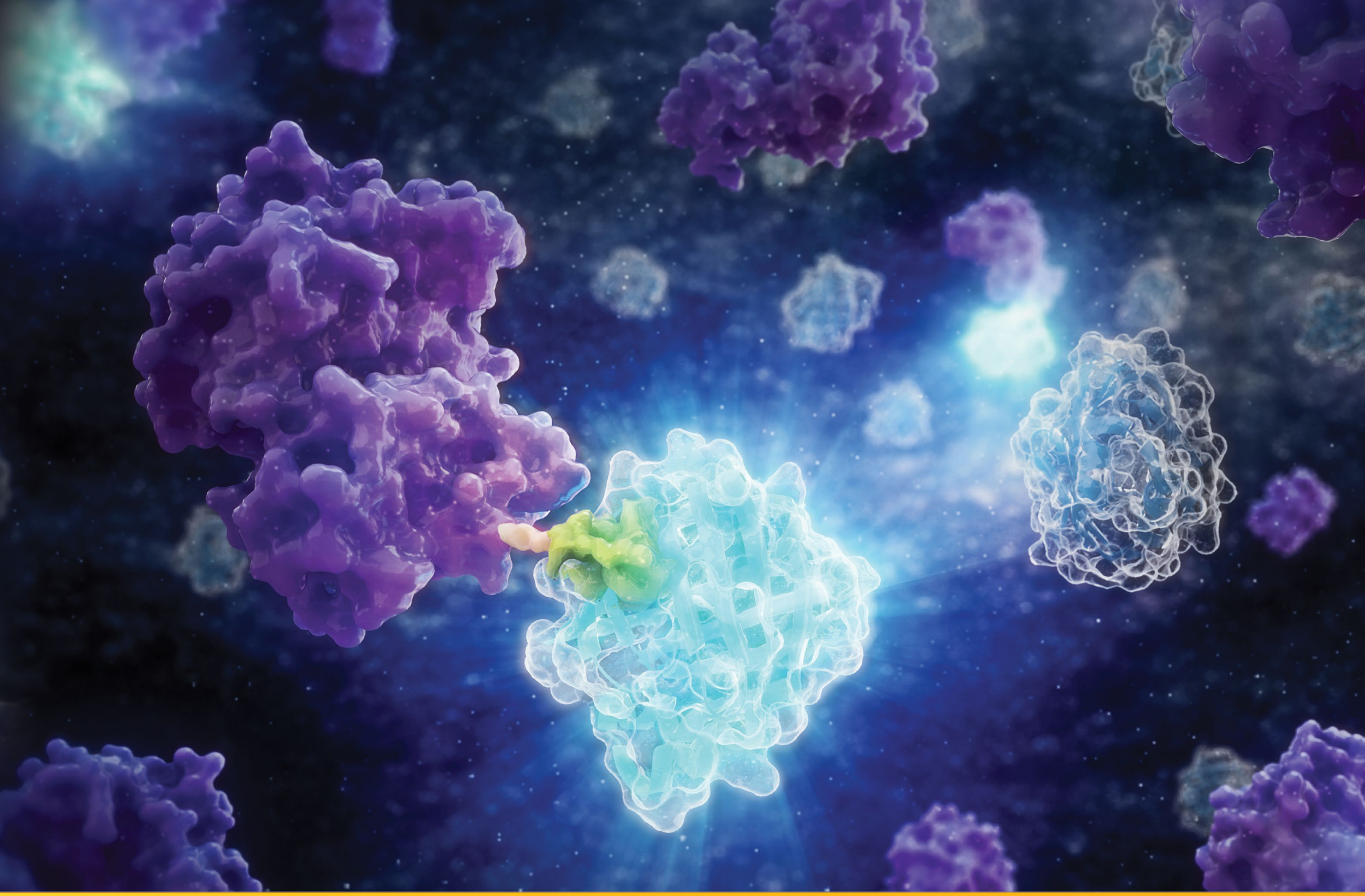

Life Science Products Catalog 2021–2022 SUPPLEMENT

Promega

Table of Contents

Welcome to our 2021–2022 new product catalog supplement that includes just under 100 new and updated product listings.

If you are unable to find what you need for your work or need special sizes or formulations, we have complete custom capabilities to help you. Visit: *www.promega.com/custom-solutions*

Thank you for your continued support and commitment to make the world better, safe and more productive through your important work in life science research. ■

Promega

New Products

New Products

Applied Sciences
Environmental and Water Testing

Water-Glo™ System Support Products

Product	Size	Cat.#
96-Well Filter Plate, 2ml, 0.2µm, wwPTFE*	5 pack	AM8782
Vacuum Manifold for Water-Glo™ 96*	1 each	AM5017
Vacuum Manifold Collection Tray*	4 pack	AM1300
Luminometer Injector Tubing Cleaning Kit**	1 each	AM1110
70% Ethanol Solution*	100ml	AM1091
ATP-Free Water**	100ml	AM1101
Water-Glo™ Lysis Reagent*	65ml	AM102A-C
Water-Glo™ ATP Standard*	2ml	AM103A-C
*Not for Medical Diagnostic Use.		
**For Research Use Only. Not for Use in Diagnostic Procedures.		

The 96-Well Filter Plates, 2ml per well, 0.2µm filter, wwPTFE membrane (Cat.# AM8782) are used with the Water-Glo™ 96 Reagents Aqueous Kit (Cat.# AM1003). The Vacuum Manifold for Water-Glo™ 96 and the Vacuum Manifold Collection Tray are used with the Water-Glo™ 96 Kits (Cat.# AM1003 and AM1005). The Luminometer Injector Tubing Cleaning Kit includes 70% Ethanol Solution and ATP-Free Water. It is used with the Water-Glo™ 96 Kits (Cat.# AM1003 and AM1005) for GloMax® Instrument injector cleaning. The Water-Glo™ Lysis Reagent and Water-Glo™ ATP Standard are components of the Water-Glo™ Kits (Cat.# AM1001, AM1002, AM1003, AM1004 and AM1005) available for separate purchase. Use the Water-Glo™ Lysis Reagent to extract ATP from biomass in water samples. Use the Water-Glo™ ATP Standard as a positive control to measure ATP concentration in water samples.

Note: The Water-Glo™ ATP Standard is designed for use with Water-Glo™ Kits and is not compatible with other products.

Viral RNA/DNA Concentration and Extraction Kits for Wastewater

Product	Size	Cat.#
Wizard® Enviro Total Nucleic Acid Kit	25 preps	A2991
Maxwell® RSC Enviro Total Nucleic Acid Kit	48 preps	AS1831
Binding Buffer 1 (BBD)	320ml	A2981
Binding Buffer 2 (BBE)	30ml	MC1501
Protease Solution	30ml	A1442
For Research Use Only. Not for Use in Diagnostic Procedures.		
Elution Buffer	50ml	A8281
Not For Medical Diagnostic Use.		

The Enviro Total Nucleic Acid Kits for Wastewater include reagents and consumables to concentrate and purify total nucleic acids (TNA) in one convenient kit. Our unique vacuum-based direct capture method simplifies sample processing by concentrating and capturing viral TNA quicker than precipitation methods without the use of cumbersome ultracentrifugation, while achieving high and consistent yield. The entire process from sample to purified TNA takes less than 2 hours and is scalable and adaptable to your needs. The process also removes most PCR inhibitors, so the resulting TNA can be used directly for amplification of SARS-CoV-2 RNA using the SARS-CoV-2 RT-qPCR Kit for Wastewater.

GoTaq® Enviro qPCR and RT-qPCR Systems

Product	Size	Cat.#
GoTaq® Enviro qPCR System	200 reactions	AM2000
	1,000 reactions	AM2001
GoTaq® Enviro RT-qPCR System	200 reactions	AM2010
	1,000 reactions	AM2011
IPC qPCR Inhibition Control Assay, CAL Fluor® 560	100 reactions	AM2030
IAC RT-qPCR Inhibition Control Assay, CAL Fluor® 560	100 reactions	AM2040
For Research Use Only. Not for Use in Diagnostic Procedures.		

The GoTaq® Enviro qPCR and RT-qPCR Systems are ready-to-use master mixes optimized for amplifying targets from environmental samples (e.g., water, soil, biological material). The systems are resistant to a wide range of PCR and RT-qPCR inhibitors such as humic acid and tannic acid, which are commonly found in environmental samples. The master mix formulations use antibody-mediated hot-start chemistry to allow reaction setup at room temperature. Rapid hot-start activation and processive enzymes make them compatible with both standard and fast instrument cycling programs.

PCR or RT-PCR inhibitors, pipetting errors and thermal cycler malfunctions are common causes of inconsistent results. To control for these errors, we recommend including the Internal Positive Control (IPC) qPCR Inhibition Control Assay, which provides information on DNA polymerase performance, or the Internal Amplification Control (IAC) RT-qPCR Inhibition Control Assay, which provides information on reverse transcriptase and DNA polymerase performance.

Clinical Laboratory Products
Amplification Assay Reagents

XpressAmp™ Direct Amplification Reagents, Custom

Product	Size	Cat.#
XpressAmp™ Direct Amplification Reagents	3,000 reactions	A8880
	250 reactions	A8882
For Laboratory Use. Outside of the United States, this product is intended for research use only unless otherwise stated.		

The XpressAmp™ Direct Amplification Reagents provide a fast, RNA extraction-free method to prepare viral samples for PCR-based amplification using commonly available RT-qPCR reagents. Collect the samples by nasopharyngeal swab in universal or viral transport media, and perform direct amplification analysis in RT-qPCR. The simple sample preparation method requires only a 10-minute, room-temperature incubation that is easy to automate.

Microsatellite Instability Testing
Clinical MSI Testing

OncoMate™ MSI Dx Analysis System

Product	Size	Cat.#
OncoMate™ MSI Dx Analysis System	100 reactions	Please Enquire
Available Separately		
OncoMate™ 5C Matrix Standard	5 preps	Please Enquire
OncoMate™ MSI Dx Interpretive Software	1 each	Please Enquire
For In Vitro Diagnostic Use. This product is only available in certain countries.		

The OncoMate™ MSI Dx Analysis System is a fluorescent, multiplex PCR-based test to detect microsatellite instability (MSI). MSI is a form of genomic instability caused by the insertion or deletion of repeating bases called microsatellites during DNA replication due to the failure of the mismatch repair system (MMR) to correct these errors.

The OncoMate™ 5C Matrix Standard consists of DNA fragments labeled with five different fluorescent dyes (fluorescein, JOE, TMR-ET, CXR-ET and WEN) in one tube. The spectral calibration is performed according to the instrument manufacturer's instructions. OncoMate™ 5C Matrix Standard is used to calibrate capillary electrophoresis instruments prior to running the OncoMate™ MSI Dx Analysis System to distinguish fluorescent signals from the specific dyes used in the assay.

The OncoMate™ MSI Dx Interpretive Software provides an accurate automated MSI result with minimal expertise. Raw data generated with the OncoMate™ MSI Dx Analysis System is imported into the software, where it is evaluated for data quality, and an automated MSI result is determined. In a study of 154 colorectal cancer cases the OncoMate™ MSI Dx Analysis System, in conjunction with the OncoMate™ MSI Dx Interpretive Software, generated an MSI determination with a 97.8% positive percent agreement and a 97.2% negative percent agreement with MMR by IHC.

Microsatellite Instability Testing
MSI Analysis for Research

LMR MSI Analysis System

Product	Size	Cat.#
LMR MSI Analysis System	100 reactions	MD2540
For Research Use Only. Not for Use in Diagnostic Procedures.		

The LMR MSI Analysis System is a PCR-based method for detecting microsatellite instability (MSI) in solid tumors that will enable researchers to more precisely assess MSI status of their samples. This improved clarity is ideal for challenging samples with subtle MSI phenotypes, including those with ambiguous results or small shifts.

The LMR panel is comprised of four Promega gold standard MSI markers (BAT-25, BAT-26, MONO-27 and NR-21) and four additional markers with increased repeat length (BAT-52, BAT-56, BAT-59 and BAT-60). This combination of markers provides increased MSI detection ability in difficult samples while maintaining overlap with data gathered using traditional markers. The assay has been optimized to enable strong and balanced amplification of all markers, even from challenging samples such as FFPE tissue.

Bioassays
Cytokine and Growth Factor Bioassays

IL-6 Bioassay

Product	Size	Cat.#
IL-6 Bioassay	1 each	JA2501
IL-6 Bioassay 5X	5 each	JA2505
IL-6 Bioassay, Korea	1 each	JA3501
IL-6 Bioassay 5X, Korea	5 each	JA3505
IL-6 Bioassay, Taiwan	1 each	JA4501
IL-6 Bioassay 5X, Taiwan	5 each	JA4505
Available Separately		
IL-6 Bioassay, Propagation Model	1 each	J2992
Not for Medical Diagnostic Use.		

IL-6 is a member of the IL-6 cytokine family, which includes IL-11, leukemia inhibitory factor (LIF), oncostatin M, ciliary neurotrophic factor (CNTF), cardiotrophin-1 (CT-1) and cardiotrophin-like cytokine (CLC). All of these cytokines signal through gp130 and the STAT3 pathway. IL-6 is transiently secreted following tissue damage or stressors, including UV irradiation, reactive oxygen species, and microbial and viral agents. It is also one of the cytokines released during bacterial sepsis. Furthermore, IL-6, along with transforming growth factor β (TGFβ), promotes differentiation of CD4+ T cells into Th17 cells and inhibits differentiation of regulatory T cells, thus playing a critical role in autoimmunity.

The IL-6 Bioassay is a bioluminescent cell-based assay designed to measure IL-6 stimulation or inhibition. The IL-6 Bioassay Cells have been engineered to express luc2P in response to IL-6 signaling. When IL-6 binds to IL-6 Bioassay Cells, the receptor transduces intracellular signals, resulting in luminescence. The bioluminescent signal is detected and quantified using Bio-Glo™ Reagent.

IL-12 Bioassay

Product	Size	Cat.#
IL-12 Bioassay	1 each	JA2601
IL-12 Bioassay 5X	5 each	JA2605
IL-12 Bioassay, Korea	1 each	JA3601
IL-12 Bioassay 5X, Korea	5 each	JA3605
IL-12 Bioassay, Taiwan	1 each	JA4601
IL-12 Bioassay 5X, Taiwan	5 each	JA4605
Available Separately		
IL-12 Bioassay, Propagation Model	1 each	J3042
Not for Medical Diagnostic Use.		

Interleukin-12 (IL-12) is a member of the IL-12 cytokine family, which includes IL-12, IL-23, IL-27, IL-35 and IL-39. Both IL-12 and IL-23 are composite cytokines, sharing a common IL-12 p40 subunit and IL-12Rβ1 receptor. Cytokine specificity is derived from the unique IL-12 p35 subunit binding to IL-12Rβ2 and the IL-23p19 subunit binding to IL-23R. Both p35 and p40 genes need to be expressed within the same cell to produce the active heterodimer and subsequent IL-12 signaling. IL-12 is secreted following stimulation of phagocytes and dendritic cells by bacteria and other microorganisms.

The IL-12 Bioassay is a bioluminescent cell-based assay designed to measure IL-12 stimulation or inhibition. The IL-12 Bioassay Cells have been engineered to express luc2P in response to IL-12 signaling. When IL-12 binds to IL-12 Bioassay Cells, the receptor transduces intracellular signals resulting in luminescence. The bioluminescent signal is detected and quantified using Bio-Glo™ Reagent.

IL-23 Bioassay

Product	Size	Cat.#
IL-23 Bioassay	1 each	JA2511
IL-23 Bioassay 5X	5 each	JA2515
IL-23 Bioassay, Korea	1 each	JA3511
IL-23 Bioassay 5X, Korea	5 each	JA3515
IL-23 Bioassay, Taiwan	1 each	JA4511
IL-23 Bioassay 5X, Taiwan	5 each	JA4515
Available Separately		
IL-23 Bioassay, Propagation Model	1 each	J3002
Not for Medical Diagnostic Use.		

Interleukin 23 (IL-23) is a member of the IL-12 cytokine family, which consists of IL-12, IL-23, IL-27, IL-35 and IL-39. IL-23 binds and signals through a heterodimeric receptor complex. The IL-23 receptor is found on natural killer cells, macrophages, memory T cells (Th17) and keratinocytes. In response to microbial pathogens and wound healing signals, IL-23 is secreted by activated dendritic cells and macrophages with subsequent neutrophil recruitment. Upon IL-23 binding to Th17 cells, signaling begins with tyrosine kinase 2 (TYK2) recruitment to IL-12Rβ1 and Janus kinase 2 (JAK2) recruitment to IL-23R. These kinases phosphorylate and activate signal transducer and activator of transcription 3 (STAT3), and to a lesser extent STAT4, STAT1 and STAT5.

The IL-23 Bioassay is a bioluminescent cell-based assay designed to measure IL-23 stimulation or inhibition. IL-23 Bioassay Cells have been engineered to express luc2P in response to IL-23 signaling. When IL-23 binds to IL-23 Bioassay Cells, the receptor transduces intracellular signals resulting in luminescence. The bioluminescent signal is detected and quantified using Bio-Glo™ Reagent.

RANKL Bioassay

Product	Size	Cat.#
RANKL Bioassay	1 each	JA2701
RANKL Bioassay 5X	5 each	JA2705
RANKL Bioassay, Korea	1 each	JA3701
RANKL Bioassay 5X, Korea	5 each	JA3705
RANKL Bioassay, Taiwan	1 each	JA4701
RANKL Bioassay 5X, Taiwan	5 each	JA4705
Available Separately		
RANKL Bioassay, Propagation Model	1 each	J3102
Not for Medical Diagnostic Use.		

Receptor activator of nuclear factor-κB (RANK/TRANCE receptor/TNFRSF11A) is a member of the tumor necrosis factor receptor (TNFR) family. Binding of its ligand RANKL to the receptor regulates osteoclast formation, activation and survival in bone modeling and remodeling, along with several pathologic conditions characterized by increased bone turnover.

The RANKL Bioassay is a bioluminescent cell-based assay designed to measure RANKL stimulation or inhibition. The RANKL Bioassay Cells have been engineered to express luc2P in response to RANKL signaling. When RANKL binds, the receptor transduces intracellular signals, resulting in luminescence. The bioluminescent signal is detected and quantified using Bio-Glo™ Reagent.

Bioassays

Immune Checkpoint Bioassays

CD28 Bioassay

Product	Size	Cat.#
CD28 Bioassay	1 each	JA6701
CD28 Bioassay 5X	5 each	JA6705
CD28 Bioassay, Korea	1 each	JA7701
CD28 Bioassay 5X, Korea	5 each	JA7705
CD28 Bioassay, Taiwan	1 each	JA8701
CD28 Bioassay 5X, Taiwan	5 each	JA8705
Available Separately		
CD28 Bioassay, Propagation Model	1 each	JA1072
Control Ab, Anti-CD28	1 each	K1231
Not for Medical Diagnostic Use.		

The CD28 Bioassay is a bioluminescent cell-based assay used to measure the potency and stability of ligands or antibodies that activate CD28. CD28 binds to the B7 family members CD80 and CD86 (collectively referred to as B7 for this bioassay) on antigen-presenting cells (APCs). Co-stimulation of T cells by CD28 activation initiates signaling cascades that result in AP-1 and NFκB transcription factor activation and nuclear translocation. These pathways significantly enhance T cell cytokine production—specifically, interleukin-2 (IL-2)—which promotes T cell proliferation, differentiation and survival.

Antibodies that agonize CD28 have the potential to enhance immune responses against cancer and chronic infection. The CD28 Bioassay reflects the mechanism of action (MOA) of biologics designed to activate CD28.

ICOS Bioassay

Product	Size	Cat.#
ICOS Bioassay	1 each	JA6801
ICOS Bioassay 5X	5 each	JA6805
ICOS Bioassay, Korea	1 each	JA7801
ICOS Bioassay 5X, Korea	5 each	JA7805
ICOS Bioassay, Taiwan	1 each	JA8801
ICOS Bioassay 5X, Taiwan	5 each	JA8805
Available Separately		
ICOS Bioassay, Propagation Model	1 each	JA3072
Control Ab, Anti-ICOS	1 each	K1241
Not for Medical Diagnostic Use.		

The ICOS Bioassay is a bioluminescent cell-based assay used to measure the potency and stability of ligands or agonist antibodies that activate ICOS. ICOS (CD278) binds to its ligand ICOSL (B7-H2, CD275), which is constitutively expressed on B cells, monocytes and dendritic cells, and can be induced on endothelial and epithelial cells during inflammation. ICOS co-stimulation induces the production of effector T cell cytokines such as interferon (IFN)-γ, interleukin (IL)-4 and IL-10.

The ICOS Bioassay reflects the mechanism of action (MOA) of biologics designed to activate ICOS.

CD28 Blockade Bioassay

Product	Size	Cat.#
CD28 Blockade Bioassay	1 each	JA6101
CD28 Blockade Bioassay 5X	5 each	JA6105
CD28 Blockade Bioassay, Korea	1 each	JA7101
CD28 Blockade Bioassay 5X, Korea	5 each	JA7105
CD28 Blockade Bioassay, Taiwan	1 each	JA8101
CD28 Blockade Bioassay 5X, Taiwan	5 each	JA8105
Available Separately		
CD28 Blockade Bioassay, Propagation Model	1 each	JA7072
Control Ab, Anti-CD28	1 each	K1231
Not for Medical Diagnostic Use.		

The CD28 Blockade Bioassay is a bioluminescent cell-based assay used to measure the potency and stability of ligands or antibodies that bind and block CD28/B7 family members, CD80 and CD86 (collectively referred to as B7 for this bioassay). CD28 binds to B7 on antigen-presenting cells (APCs). Co-stimulation of T cells by CD28 activation initiates signaling cascades that result in AP-1 and NFκB transcription factor activation and nuclear translocation. These pathways significantly enhance T cell cytokine production—specifically, interleukin-2 (IL-2)—which promotes T cell proliferation, differentiation and survival.

Blockade of CD28 has proven beneficial in preclinical and clinical studies to reduce autoimmunity and alloimmunity. The CD28 Blockade Bioassay reflects the mechanism of action (MOA) of biologics designed to block the interaction of CD28 with its B7 family ligands.

ICOS Blockade Bioassay

Product	Size	Cat.#
ICOS Blockade Bioassay	1 each	JA6001
ICOS Blockade Bioassay 5X	5 each	JA6005
ICOS Blockade Bioassay, Korea	1 each	JA7001
ICOS Blockade Bioassay 5X, Korea	5 each	JA7005
ICOS Blockade Bioassay, Taiwan	1 each	JA8001
ICOS Blockade Bioassay 5X, Taiwan	5 each	JA8005
Available Separately		
ICOS Blockade Bioassay, Propagation Model	1 each	JA6072
Control Ab, Anti-ICOS	1 each	K1241
Not for Medical Diagnostic Use.		

The ICOS Blockade Bioassay is a bioluminescent cell-based assay used to measure the potency and stability of of ligands or antibodies that bind and block ICOS/ICOSL. ICOS (CD278) binds to its ligand ICOSL (B7-H2, CD275), which is constitutively expressed on B cells, monocytes and dendritic cells, and can be induced on endothelial and epithelial cells during inflammation. ICOS co-stimulation induces the production of effector T cell cytokines such as interferon (IFN)-γ, interleukin (IL)-4 and IL-10.

The ICOS Blockade Bioassay reflects the mechanism of action (MOA) of biologics designed to block the interaction of ICOS with its ligand, ICOSL.

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

Product	Size	Cat.#
FcγRIIb aAPC/CHO-K1 Cells	1 × 0.5ml	JA9331
	5 × 0.5ml	JA9335
FcγRIIb aAPC/CHO-K1 Cells, CPM	2 × 1ml	J3252
aAPC/CHO-K1 Cells	1 × 0.5ml	JA9441
	5 × 0.5ml	JA9445
aAPC/CHO-K1 Cells, CPM	1 × 0.5ml	J3312
Not for Medical Diagnostic Use.		

FcγRIIb aAPC/CHO-K1 Cells are engineered to express human FcγRIIb and an engineered cell-surface protein designed to activate the TCR complex in an antigen-independent manner. They are available in thaw-and-use or Cell Propagation Model (CPM) formats. The CPM cells can be thawed, propagated and banked for long-term use. These products are not themselves reporter cells; they function to provide activation of the TCR/CD3 complex on effector cells and crosslink anti-CD28 and anti-ICOS agonist antibodies.

aAPC/CHO-K1 Cells express an engineered cell-surface protein designed to activate the TCR complex in an antigen-independent manner. They are available in thaw-and-use or Cell Propagation Model (CPM) formats. The CPM cells can be thawed, propagated and banked for long-term use. These products are not themselves reporter cells; they function to provide activation of the TCR/CD3 complex on effector cells. These cells do not express FcγRIIb.

CD40 Bioassay

Product	Size	Cat.#
CD40 Bioassay	1 each	JA2151
CD40 Bioassay 5X	5 each	JA2155
CD40 Bioassay, Korea	1 each	JA3151
CD40 Bioassay 5X, Korea	5 each	JA3155
CD40 Bioassay, Taiwan	1 each	JA4151
CD40 Bioassay 5X, Taiwan	5 each	JA4155
Available Separately		
CD40 Bioassay, Propagation Model	1 each	J2132
Control Ab, Anti-CD40	1 each	K1181
Not for Medical Diagnostic Use.		

The CD40 Bioassay is a bioluminescent cell-based assay that measures potency and stability of ligands or agonist antibodies and other biologics that can bind and activate CD40. CD40 is expressed on the surface of B cells, dendritic cells and monocytes and is a member of the tumor necrosis factor receptor superfamily. CD40 ligand (CD154) is the primary ligand for CD40 and is expressed by activated T cells, critical regulators of cellular and humoral immunity. Signaling via CD40 triggers activation of antigen-presenting cells (APC).

Agonist CD40 antibodies can mimic the CD40 ligand and are capable of substituting for CD4+ helper T cells in murine models of T cell-mediated immunity. Therefore, agonist CD40 antibodies can rescue the function of APC in tumor-bearing hosts and restore effective immune responses against tumor antigens. Subsequent data from multiple preclinical models has demonstrated synergistic enhancement from combining CD40 agonists with cytotoxics, especially in chemotherapy.

The CD40 Bioassay reflects the mechanism of action (MOA) of biologics designed to activate the CD40 receptor.

Section Contents

Table of Contents

GITR Bioassay

Product	Size	Cat.#
GITR Bioassay	1 each	JA2291
GITR Bioassay 5X	5 each	JA2295
GITR Bioassay, Korea	1 each	JA3291
GITR Bioassay 5X, Korea	5 each	JA3295
GITR Bioassay, Taiwan	1 each	JA4291
GITR Bioassay 5X, Taiwan	5 each	JA4295
Available Separately		
GITR Bioassay, Propagation Model	1 each	J2272
Control Ab, Anti-GITR	1 each	K1171
Not for Medical Diagnostic Use.		

The GITR Bioassays are bioluminescent cell-based assays used to measure the potency and stability of ligands or agonist antibodies that bind and activate GITR. GITR (CD357/TNFRSF18), a member of the tumor necrosis factor (TNF) receptor superfamily, is a costimulatory receptor widely expressed on most immune cells and further upregulated on activated T cells. When engaged with GITR ligand (GITRL) on the cell surface, GITR enhances subsequent T cell expansion and cytokine production including interleukin-2 (IL-2) and IL-9.

The GITR Bioassay reflects the mechanism of action (MOA) of biologics designed to activate GITR.

OX40 Bioassay

Product	Size	Cat.#
OX40 Bioassay	1 each	JA2191
OX40 Bioassay 5X	5 each	JA2195
OX40 Bioassay, Korea	1 each	JA3191
OX40 Bioassay 5X, Korea	5 each	JA3195
OX40 Bioassay, Taiwan	1 each	JA4191
OX40 Bioassay 5X, Taiwan	5 each	JA4195
Available Separately		
OX40 Bioassay, Propagation Model	1 each	J2172
Control Ab, Anti-OX40	1 each	K1191
Not for Medical Diagnostic Use.		

The OX40 Bioassay is a bioluminescent cell-based assay that measures the potency and stability of ligands or agonist antibodies that can bind and activate OX40. OX40 (CD134/TNFRSF4), a member of the tumor necrosis factor (TNF) receptor superfamily, is a costimulatory receptor expressed primarily on activated T cells, and on neutrophils and natural killer (NK) cells to a lesser extent. When present on the cell surface, OX40 interacts with OX40 ligand (OX40L) and induces subsequent cell proliferation, survival and production of cytokines, particularly in T cells.

The OX40 Bioassay reflects the mechanism of action (MOA) of biologics designed to activate OX40 following the addition of OX40 ligand or OX40 agonist antibodies.

TIM-3 Bioassay

Product	Size	Cat.#
TIM-3 Bioassay	1 each	JA2211
TIM-3 Bioassay 5X	5 each	JA2215
TIM-3 Bioassay, Korea	1 each	JA3211
TIM-3 Bioassay 5X, Korea	5 each	JA3215
TIM-3 Bioassay, Taiwan	1 each	JA4211
TIM-3 Bioassay 5X, Taiwan	5 each	JA4215
Available Separately		
TIM-3 Bioassay, Propagation Model	1 each	JA2222
Control Ab, Anti-TIM-3	1 each	K1210
Not for Medical Diagnostic Use.		

The TIM-3 Bioassay is a bioluminescent reporter cell-based assay that overcomes the limitations of existing assays and can be used to measure the potency and stability of antibodies and other biologics targeting TIM-3. TIM-3 (CD366, HAVCR2) is an immune checkpoint receptor expressed on a subset of activated T cells, regulatory T cells (Tregs), macrophages and dendritic cells. TIM-3 has the capacity to inhibit or costimulate T-cell receptor (TCR) signaling in different in vitro systems.

The TIM-3 Bioassay consists of two cell lines:

- TIM-3 Effector Cells: Human T cells genetically engineered to express human TIM-3 and a NanoLuc® luciferase reporter driven by T cell activation pathway-dependent response elements
- TIM-3 Target Cells: MHCII-positive human cell line

When the two cell types are co-cultured, TIM-3 Target Cells provide low-level stimulation to the TIM-3 Effector Cells through the TCR. The combined stimulation of the TCR and TIM-3 induces promoter-mediated luciferase activation and luminescence. Adding a TIM-3 blocking antibody prevents TIM-3 signaling and reduces promoter-mediated luminescence.

Bio-Glo-NL™ Luciferase Assay System

Product	Size	Cat.#
Bio-Glo-NL™ Luciferase Assay System	10ml	J3081
	100ml	J3082
	10 × 100ml	J3083
Not For Medical Diagnostic Use.		

The Bio-Glo-NL™ Luciferase Assay System provides a highly sensitive, robust and homogeneous reagent for the detection of NanoLuc® luciferase reporter gene expression in Promega bioassays. Bio-Glo-NL™ Assay Reagent contains a new luciferase substrate, resulting in a reagent that is brighter, more stable and more tolerant to sample components than standard luciferase assay reagents. Bio-Glo-NL™ Assay Reagent is functionally tested for performance in the TIM-3 Bioassay and is intended for use with this or other NanoLuc®-luciferase based reporter bioassays.

Bioassays
T Cell Activation Bioassays

T Cell Activation Bioassay (TCRαβ-KO)

Product	Size	Cat.#
T Cell Activation Bioassay (TCRαβ-KO, CD8+), Propagation Model	1 each	GA1162
T Cell Activation Bioassay (TCRαβ-KO, CD4+), Propagation Model	1 each	GA1172
T Cell Activation Bioassay (TCRαβ-KO, CD4+, CD8+), Propagation Model	1 each	GA1182
T Cell Activation Bioassay (TCRαβ-KO, CD8+), Cell Bank	1 each	GA1220
T Cell Activation Bioassay (TCRαβ-KO, CD4+), Cell Bank	1 each	GA1210
T Cell Activation Bioassay (TCRαβ-KO, CD4+, CD8+), Cell Bank	1 each	GA1230
Not For Medical Diagnostic Use.		

Measurement of TCR activation using traditional methods relies on laborious protocols and highly variable end points. The TCRαβ-KO Bioassay overcomes the limitations of these existing methods and enables functional testing of transgenic TCRs for antigen ranking, specificity and safety testing for applications such as quality control, TCR-T and CAR-T therapies.

The T Cell Activation Bioassay (TCRαβ-KO) is a bioluminescent cell-based assay for measuring the potency of transgenic TCR constructs to activate T cells without the constraints of endogenous TCR expression. The assay consists of a genetically engineered Jurkat T cell line with endogenous TCR α and β chains knocked out using CRISPR/Cas9. These cells express a luciferase reporter driven by a TCR pathway-dependent promoter.

Cell Health Assays
Apoptosis

Caspase-Glo® 3/7 3D Assay

Product	Size	Cat.#
Caspase-Glo® 3/7 3D Assay	10ml	G8981
	100ml	G8982
	10 × 10ml	G8983
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Caspase-Glo® 3/7 3D Assay is a homogeneous, luminescent assay that measures caspase-3 and -7 activities present in apoptotic 3D cultures. The assay reagent contains a luminogenic caspase-3/7 substrate in cell lysis buffer. A one-step addition of the reagent results in cell lysis followed by caspase cleavage of the substrate and generation of a luminescent signal. Luminescence is proportional to the amount of caspase activity present.

The assay is validated for use in a wide range of 3D cell models and is suitable for high-throughput applications. It can also be multiplexed with other homogeneous assays so you can get more data from a single well.

Note: The Caspase-Glo® 3/7 3D Assay uses the same chemistry as the Caspase-Glo® 3/7 Assay with an improved protocol designed for use with 3D models.

Cell Health Assays
Inflammation Assays

Lumit™ IL-1β Human/Mouse Immunoassay

Product	Size	Cat.#
Lumit™ IL-1β Human Immunoassay	100 assays	W6010
	500 assays	W6012
	1,000 assays	W6011
Lumit™ IL-1β Mouse Immunoassay	100 assays	W7010
	500 assays	W7012
	1,000 assays	W7011
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Lumit™ IL-1β Immunoassay quantitatively measures released IL-1β in cell culture samples using a simple, no-wash protocol. Just add labeled antibodies to the sample, add detection reagent and read luminescent signal using a standard plate-reading luminometer. The entire protocol is completed in less than 70 minutes! The assay can be used directly on cells in culture or culture medium transferred to a separate assay plate.

RealTime-Glo™ Extracellular ATP Assay

Product	Size	Cat.#
RealTime-Glo™ Extracellular ATP Assay	200 assays	GA5010
	2,000 assays	GA5011
	10 × 200 assays	GA5012
For Research Use Only. Not for Use in Diagnostic Procedures.		

The RealTime-Glo™ Extracellular ATP Assay is a bioluminescent assay designed for kinetic monitoring of ATP released from dying, stressed or activated cells. Extracellular ATP can function as a damage associated molecular pattern (DAMP) and is a key biomarker for determining whether a treatment induces immunogenic cell death, a specialized form of cell death that results in an immune response.

The RealTime-Glo™ Extracellular ATP Assay allows you to continually monitor extracellular ATP so you won't miss crucial time points. It is compatible for use in 384-well plates, making it ideal for high-throughput screening applications.

Cell Signaling
Kinase Target Engagement

NanoBRET™ TE Intracellular Kinase Assay

Product	Size	Cat.#
NanoBRET™ TE Intracellular Kinase Assay, K-3	100 assays	N2600
	1,000 assays	N2601
NanoBRET™ TE Intracellular Kinase Detection Reagents, K-3	10,000 assays	N2810
NanoBRET™ TE Intracellular Kinase Assay, K-8	100 assays	N2620
	1,000 assays	N2621
NanoBRET™ TE Intracellular Kinase Detection Reagents, K-8	10,000 assays	N2820
NanoBRET™ TE Intracellular Kinase Assay, K-9	100 assays	N2630
	1,000 assays	N2631
NanoBRET™ TE Intracellular Kinase Detection Reagents, K-9	10,000 assays	N2830
NanoBRET™ TE Intracellular Kinase Assay, K-10	100 assays	N2640
	1,000 assays	N2641
NanoBRET™ TE Intracellular Kinase Detection Reagents, K-10	10,000 assays	N2840
NanoBRET™ TE Intracellular Kinase Assay, K-11	100 assays	N2650
	1,000 assays	N2651
NanoBRET™ TE Intracellular Kinase Detection Reagents, K-11	10,000 assays	N2850
Available Separately		
NanoBRET™ Tracer K-4	300µl	N2492
NanoBRET™ Tracer K-5	550µl	N2482
NanoBRET™ Tracer K-3	300µl	N2602
NanoBRET™ Tracer K-8	300µl	N2622
NanoBRET™ Tracer K-9	300µl	N2632
NanoBRET™ Tracer K-10	300µl	N2642
NanoBRET™ Tracer K-11	300µl	N2652
Intracellular TE Nano-Glo® Substrate/Inhibitor	100 assays	N2162
Intracellular TE Nano-Glo® Vivazine™/Inhibitor	100 assays	N2200
	10,000 assays	N2201
Transfection Carrier DNA	2 × 100µg	E4882
CC1 pan-Kinase Inhibitor	100µl	N2661
For Research Use Only. Not for Use in Diagnostic Procedures.		

The NanoBRET™ Target Engagement (TE) Intracellular Kinase Assays are based on the NanoBRET™ System, an energy transfer technique designed to measure molecular proximity in living cells. The NanoBRET™ TE Assays measure the apparent affinity of test compounds by competitive displacement of the NanoBRET™ tracer, reversibly bound to a NanoLuc® luciferase-kinase fusion expressed in cells. The kinase-NanoLuc® fusion protein serves as the energy donor, while the fluorescent NanoBRET™ TE Tracer serves as the energy acceptor in the BRET assay.

A NanoBRET™ tracer is composed of a bioavailable small molecule ligand or inhibitor of a target protein that is covalently conjugated to a fluorescent dye. Several NanoBRET™ tracers were developed as a part of the NanoBRET™ TE Intracellular Kinase Assay system, which uses a bioluminescent resonance energy transfer (BRET)-based method to measure compound binding at select target kinases within intact cells.

The NanoBRET™ TE Tracers can be purchased individually or as part of a NanoBRET™ TE Intracellular Kinase Assay. Each NanoBRET™ TE Kinase Assay provides the reagents needed for NanoBRET™ detection, including a NanoBRET™ Tracer, NanoBRET™ Nano-Glo® Substrate, Extracellular NanoLuc® Inhibitor and Tracer Dilution Buffer. The NanoBRET™ TE Tracers provide users with increased flexibility to study new kinases or test alternate tracers.

Kinase-NanoLuc® Fusion Vectors

Product	Size	Cat.#
NanoLuc®-ABL1(E255K) Fusion Vector	20µg	NV2251
NanoLuc®-ABL1(F317I) Fusion Vector	20µg	NV2261
NanoLuc®-ABL1(F317L) Fusion Vector	20µg	NV2271
NanoLuc®-ABL1(H396P) Fusion Vector	20µg	NV2281
NanoLuc®-ABL1(M351T) Fusion Vector	20µg	NV2291
NanoLuc®-ABL1(Q252H) Fusion Vector	20µg	NV2301
NanoLuc®-ABL1(Y253F) Fusion Vector	20µg	NV2311
NanoLuc®-ABL1(T315I) Fusion Vector	20µg	NV2321
NanoLuc®-ABL2 Fusion Vector	20µg	NV2331
ACVR1-NanoLuc® Fusion Vector	20µg	NV2341
ACVR1(G328V)-NanoLuc® Fusion Vector	20µg	NV2351
ACVR1(G356D)-NanoLuc® Fusion Vector	20µg	NV2361
ACVR1(Q207D)-NanoLuc® Fusion Vector	20µg	NV2371
ACVR1(R206H)-NanoLuc® Fusion Vector	20µg	NV2381
ACVRL1-NanoLuc® Fusion Vector	20µg	NV2391
ADK-NanoLuc® Fusion Vector	20µg	NV2401
AKT1-NanoLuc® Fusion Vector	20µg	NV2411
AKT1(E17K)-NanoLuc® Fusion Vector	20µg	NV2421
AKT2(E17K)-NanoLuc® Fusion Vector	20µg	NV2431
AKT3(E17K)-NanoLuc® Fusion Vector	20µg	NV2441
AKT3(G171R)-NanoLuc® Fusion Vector	20µg	NV2451
NanoLuc®-BLK Fusion Vector	20µg	NV2461
BMPR1A-NanoLuc® Fusion Vector	20µg	NV2471
BRAF(V600E)-NanoLuc® Fusion Vector	20µg	NV2481
NanoLuc®-BRSK1 Fusion Vector	20µg	NV2491
BTK(C481S)-NanoLuc® Fusion Vector	20µg	NV2501
BTK(E41K)-NanoLuc® Fusion Vector	20µg	NV2511
BTK(P190K)-NanoLuc® Fusion Vector	20µg	NV2521
NanoLuc®-CAMK1 Fusion Vector	20µg	NV2531
NanoLuc®-CAMK1D Fusion Vector	20µg	NV2541
NanoLuc®-CAMK1G Fusion Vector	20µg	NV2551
NanoLuc®-CAMK2A Fusion Vector	20µg	NV2561
NanoLuc®-CAMK2D Fusion Vector	20µg	NV2571
CAMK2G-NanoLuc® Fusion Vector	20µg	NV2581
CCNA1 Expression Vector	3 × 20µg	NV2591
CCNB1 Expression Vector	3 × 20µg	NV2601
CCNC Expression Vector	3 × 20µg	NV2611
CCND1 Expression Vector	3 × 20µg	NV2621
CCND3 Expression Vector	3 × 20µg	NV2631
CCNE1 Expression Vector	3 × 20µg	NV2641
CCNH Expression Vector	3 × 20µg	NV2651
CCNK Expression Vector	3 × 20µg	NV2661
CCNL2 Expression Vector	3 × 20µg	NV2671
CCNT1 Expression Vector	3 × 20µg	NV2681
CCNY Expression Vector	3 × 20µg	NV2691
CDK1-NanoLuc® Fusion Vector	20µg	NV2701
CDK10-NanoLuc® Fusion Vector	20µg	NV2711
CDK14-NanoLuc® Fusion Vector	20µg	NV2721
NanoLuc®-CDK15 Fusion Vector	20µg	NV2731
CDK16-NanoLuc® Fusion Vector	20µg	NV2741
CDK17-NanoLuc® Fusion Vector	20µg	NV2751
CDK18-NanoLuc® Fusion Vector	20µg	NV2761
NanoLuc®-CDK19 Fusion Vector	20µg	NV2771
CDK2-NanoLuc® Fusion Vector	20µg	NV2781
NanoLuc®-CDK20 Fusion Vector	20µg	NV2791
CDK3-NanoLuc® Fusion Vector	20µg	NV2801
NanoLuc®-CDK4 Fusion Vector	20µg	NV2811

Product	Size	Cat.#
CDK5R1 Expression Vector	3 × 20µg	NV2821
CDK5R2 Expression Vector	3 × 20µg	NV2831
NanoLuc®-CDK6 Fusion Vector	20µg	NV2841
NanoLuc®-CDK7 Fusion Vector	20µg	NV2851
NanoLuc®-CDK8 Fusion Vector	20µg	NV2861
NanoLuc®-CDK9 Fusion Vector	20µg	NV2871
NanoLuc®-CDKL1 Fusion Vector	20µg	NV2881
NanoLuc®-CDKL2 Fusion Vector	20µg	NV2891
NanoLuc®-CDKL3 Fusion Vector	20µg	NV2901
NanoLuc®-CDKL5 Fusion Vector	20µg	NV2911
NanoLuc®-CHEK1 Fusion Vector	20µg	NV2921
CHEK2-NanoLuc® Fusion Vector	20µg	NV2931
NanoLuc®-COQ8B Fusion Vector	20µg	NV2941
NanoLuc®-CSNK1A1L Fusion Vector	20µg	NV2951
NanoLuc®-CSNK1D Fusion Vector	20µg	NV2961
NanoLuc®-CSNK1E Fusion Vector	20µg	NV2971
CSNK2A1-NanoLuc® Fusion Vector	20µg	NV2981
NanoLuc®-DAPK2 Fusion Vector	20µg	NV2991
DCLK3-NanoLuc® Fusion Vector	20µg	NV3001
DDR2(N456S)-NanoLuc® Fusion Vector	20µg	NV3011
NanoLuc®-DMPK Fusion Vector	20µg	NV3021
NanoLuc®-DYRK1A Fusion Vector	20µg	NV3031
DYRK2-NanoLuc® Fusion Vector	20µg	NV3041
NanoLuc®-EIF2AK4(Dom.2) Fusion Vector	20µg	NV3051
EPHA3-NanoLuc® Fusion Vector	20µg	NV3061
EPHB1-NanoLuc® Fusion Vector	20µg	NV3071
ERN2-NanoLuc® Fusion Vector	20µg	NV3081
FES-NanoLuc® Fusion Vector	20µg	NV3091
FGFR3(G697C)-NanoLuc® Fusion Vector	20µg	NV3101
FLT1-NanoLuc® Fusion Vector	20µg	NV3111
FLT3(D835H)-NanoLuc® Fusion Vector	20µg	NV3121
FLT3(D835V)-NanoLuc® Fusion Vector	20µg	NV3131
FLT3(D835Y)-NanoLuc® Fusion Vector	20µg	NV3141
FLT3(K663Q)-NanoLuc® Fusion Vector	20µg	NV3151
FLT3(N841I)-NanoLuc® Fusion Vector	20µg	NV3161
FLT3(R834Q)-NanoLuc® Fusion Vector	20µg	NV3171
FYN(Y531F)-NanoLuc® Fusion Vector	20µg	NV3181
NanoLuc®-GSK3A Fusion Vector	20µg	NV3191
NanoLuc®-GSK3B Fusion Vector	20µg	NV3201
HCK-NanoLuc® Fusion Vector	20µg	NV3211
NanoLuc®-HIPK2 Fusion Vector	20µg	NV3221
NanoLuc®-HIPK3 Fusion Vector	20µg	NV3231
NanoLuc®-HIPK4 Fusion Vector	20µg	NV3241
NanoLuc®-ICK Fusion Vector	20µg	NV3251
IGF1R-NanoLuc® Fusion Vector	20µg	NV3261
INSR-NanoLuc® Fusion Vector	20µg	NV3271
NanoLuc®-IRAK1 Fusion Vector	20µg	NV3281
JAK2-NanoLuc® Fusion Vector	20µg	NV3291
JAK2(V617F)-NanoLuc® Fusion Vector	20µg	NV3301
NanoLuc®-JAK2(JH1 domain) Fusion Vector	20µg	NV3311
KIT(A829P)-NanoLuc® Fusion Vector	20µg	NV3321
KIT(D816H)-NanoLuc® Fusion Vector	20µg	NV3331
KIT(D816V)-NanoLuc® Fusion Vector	20µg	NV3341
KIT(L576P)-NanoLuc® Fusion Vector	20µg	NV3351
KIT(V559D)-NanoLuc® Fusion Vector	20µg	NV3361
KIT(V559D,T670I)-NanoLuc® Fusion Vector	20µg	NV3371
KIT(V559D,V654A)-NanoLuc® Fusion Vector	20µg	NV3381
LIMK1-NanoLuc® Fusion Vector	20µg	NV3391
LRRK2-NanoLuc® Fusion Vector	20µg	NV3401

Product	Size	Cat.#
LRRK2(G2019S)-NanoLuc® Fusion Vector	20µg	NV3411
LRRK2(R1441C)-NanoLuc® Fusion Vector	20µg	NV3421
LRRK2(I2020T)-NanoLuc® Fusion Vector	20µg	NV3431
MAP2K6-NanoLuc® Fusion Vector	20µg	NV3441
NanoLuc®-MAP3K13 Fusion Vector	20µg	NV3451
MAP3K19-NanoLuc® Fusion Vector	20µg	NV3461
MAP3K2-NanoLuc® Fusion Vector	20µg	NV3471
NanoLuc®-MAP3K21 Fusion Vector	20µg	NV3481
MAP3K3-NanoLuc® Fusion Vector	20µg	NV3491
MAP4K5-NanoLuc® Fusion Vector	20µg	NV3501
MAPK14(T106M)-NanoLuc® Fusion Vector	20µg	NV3511
NanoLuc®-MARK3 Fusion Vector	20µg	NV3521
NanoLuc®-MAST3 Fusion Vector	20µg	NV3531
NanoLuc®-MAST4 Fusion Vector	20µg	NV3541
NanoLuc®-MELK(T460M) Fusion Vector	20µg	NV3551
MERTK-NanoLuc® Fusion Vector	20µg	NV3561
MERTK(A708S)-NanoLuc® Fusion Vector	20µg	NV3571
MET(M1250T)-NanoLuc® Fusion Vector	20µg	NV3581
MET(Y1235D)-NanoLuc® Fusion Vector	20µg	NV3591
MET(P991S)-NanoLuc® Fusion Vector	20µg	NV3601
MET(T992I)-NanoLuc® Fusion Vector	20µg	NV3611
MET(T1173I)-NanoLuc® Fusion Vector	20µg	NV3621
MET(V1092I)-NanoLuc® Fusion Vector	20µg	NV3631
MET(Y1230A)-NanoLuc® Fusion Vector	20µg	NV3641
MET(Y1230C)-NanoLuc® Fusion Vector	20µg	NV3651
MET(Y1230D)-NanoLuc® Fusion Vector	20µg	NV3661
MET(Y1230H)-NanoLuc® Fusion Vector	20µg	NV3671
MET(D1228N)-NanoLuc® Fusion Vector	20µg	NV3681
MET(D1228H)-NanoLuc® Fusion Vector	20µg	NV3691
MET(F1200I)-NanoLuc® Fusion Vector	20µg	NV3701
NanoLuc®-MKNK2 Fusion Vector	20µg	NV3711
NanoLuc®-MLTK Fusion Vector	20µg	NV3721
NanoLuc®-MOK Fusion Vector	20µg	NV3731
MYLK3-NanoLuc® Fusion Vector	20µg	NV3741
MYLK4-NanoLuc® Fusion Vector	20µg	NV3751
NanoLuc®-NEK1 Fusion Vector	20µg	NV3761
NanoLuc®-NEK11 Fusion Vector	20µg	NV3771
NanoLuc®-NEK4 Fusion Vector	20µg	NV3781
NanoLuc®-NEK5 Fusion Vector	20µg	NV3791
NEK6-NanoLuc® Fusion Vector	20µg	NV3801
NIM1K-NanoLuc® Fusion Vector	20µg	NV3811
NLK-NanoLuc® Fusion Vector	20µg	NV3821
NanoLuc®-NRK Fusion Vector	20µg	NV3831
NTRK1(G667C)-NanoLuc® Fusion Vector	20µg	NV3841
NUAK2-NanoLuc® Fusion Vector	20µg	NV3851
PAK6-NanoLuc® Fusion Vector	20µg	NV3861
PDGFRA(V561D)-NanoLuc® Fusion Vector	20µg	NV3871
NanoLuc®-PHKG2 Fusion Vector	20µg	NV3881
PIK3C3-NanoLuc® Fusion Vector	20µg	NV3891
NanoLuc®-PIK3CA Fusion Vector	20µg	NV3901
NanoLuc®-PIK3CA(C420R) Fusion Vector	20µg	NV3911
NanoLuc®-PIK3CA(E542K) Fusion Vector	20µg	NV3921
NanoLuc®-PIK3CA(E545A) Fusion Vector	20µg	NV3931
NanoLuc®-PIK3CA(E545K) Fusion Vector	20µg	NV3941
NanoLuc®-PIK3CA(H1047L) Fusion Vector	20µg	NV3951
NanoLuc®-PIK3CA(H1047R) Fusion Vector	20µg	NV3961
NanoLuc®-PIK3CA(H1047Y) Fusion Vector	20µg	NV3971
NanoLuc®-PIK3CA(I800L) Fusion Vector	20µg	NV3981
NanoLuc®-PIK3CA(M1043I) Fusion Vector	20µg	NV3991

Product	Size	Cat.#
NanoLuc®-PIK3CA(Q546K) Fusion Vector	20µg	NV4001
NanoLuc®-PIK3CB Fusion Vector	20µg	NV4011
NanoLuc®-PIK3CD Fusion Vector	20µg	NV4021
PIK3R1 Expression Vector	3 × 20µg	NV4031
PIKFYVE-NanoLuc® Fusion Vector	20µg	NV4041
NanoLuc®-PIM3 Fusion Vector	20µg	NV4051
PIP4K2C-NanoLuc® Fusion Vector	20µg	NV4061
NanoLuc®-PIP5K1B Fusion Vector	20µg	NV4071
NanoLuc®-PLK2 Fusion Vector	20µg	NV4081
NanoLuc®-PLK3 Fusion Vector	20µg	NV4091
NanoLuc®-PRKAA1 Fusion Vector	20µg	NV4101
PRKACB-NanoLuc® Fusion Vector	20µg	NV4111
PRKCE-NanoLuc® Fusion Vector	20µg	NV4121
PRKG2-NanoLuc® Fusion Vector	20µg	NV4131
RET(M918T)-NanoLuc® Fusion Vector	20µg	NV4141
RET(V804L)-NanoLuc® Fusion Vector	20µg	NV4151
RET(V804M)-NanoLuc® Fusion Vector	20µg	NV4161
NanoLuc®-RIPK1 Fusion Vector	20µg	NV4171
RON-NanoLuc® Fusion Vector	20µg	NV4181
NanoLuc®-RPS6KA3(I416V) Fusion Vector	20µg	NV4191
NanoLuc®-RPS6KA3(L608F) Fusion Vector	20µg	NV4201
NanoLuc®-SBK3 Fusion Vector	20µg	NV4211
SGK1-NanoLuc® Fusion Vector	20µg	NV4221
SGK2-NanoLuc® Fusion Vector	20µg	NV4231
NanoLuc®-SNRK Fusion Vector	20µg	NV4241
NanoLuc®-SRMS Fusion Vector	20µg	NV4251
NanoLuc®-STK10 Fusion Vector	20µg	NV4261
STK17B-NanoLuc® Fusion Vector	20µg	NV4271
STK24-NanoLuc® Fusion Vector	20µg	NV4281
STK26-NanoLuc® Fusion Vector	20µg	NV4291
NanoLuc®-STK3 Fusion Vector	20µg	NV4301
NanoLuc®-STK32A Fusion Vector	20µg	NV4311
STK35-NanoLuc® Fusion Vector	20µg	NV4321
NanoLuc®-STK36 Fusion Vector	20µg	NV4331
STK38L-NanoLuc® Fusion Vector	20µg	NV4341
NanoLuc®-STK4 Fusion Vector	20µg	NV4351
TEK(A1124V)-NanoLuc® Fusion Vector	20µg	NV4361
TEK(P883A)-NanoLuc® Fusion Vector	20µg	NV4371
TEK(R849W)-NanoLuc® Fusion Vector	20µg	NV4381
TEK(Y1108F)-NanoLuc® Fusion Vector	20µg	NV4391
TEK(Y897C)-NanoLuc® Fusion Vector	20µg	NV4401
TEK(Y897S)-NanoLuc® Fusion Vector	20µg	NV4411
TGFBR2-NanoLuc® Fusion Vector	20µg	NV4421
TLK1-NanoLuc® Fusion Vector	20µg	NV4431
TLK2-NanoLuc® Fusion Vector	20µg	NV4441
TNK2-NanoLuc® Fusion Vector	20µg	NV4451
TNNI3K-NanoLuc® Fusion Vector	20µg	NV4461
NanoLuc®-TSSK1B Fusion Vector	20µg	NV4471
TYRO3-NanoLuc® Fusion Vector	20µg	NV4481
NanoLuc®-ULK3 Fusion Vector	20µg	NV4491
NanoLuc®-WEE2 Fusion Vector	20µg	NV4501
TYK2-NanoLuc® Fusion Vector	20µg	NV4511
TYK2(JH1 domain)-NanoLuc® Fusion Vector	20µg	NV4521
TYK2(JH2 domain)-NanoLuc® Fusion Vector	20µg	NV4531
For Research Use Only. Not for Use in Diagnostic Procedures.		

These NanoLuc® Fusion Vectors are designed for use with the NanoBRET™ Target Engagement (TE) Intracellular Kinase Assay, where the plasmid can be transfected into various cell lines for target engagement analysis. The NanoLuc® luciferase kinase fusion vectors are supplied transfection-ready. The CMV promoter drives the expression of the full-length NanoLuc® kinase fusion protein.

Energy Metabolism

Lipid Metabolism

Glycerol-Glo™ Assay

Product	Size	Cat.#
Glycerol-Glo™ Assay	5ml	J3150
	50ml	J3151
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Glycerol-Glo™ Assay is a bioluminescent assay for rapid and sensitive measurement of glycerol in a variety of biological samples, including cells grown in monolayer or 3D structures, cell culture medium, tissues and serum samples. Glycerol is often measured as the product of lipolysis, where it is released from triglycerides. Glycerol is also a substrate or product of many other enzymatic or metabolic processes that can be studied with the glycerol assay. Any processes that result in changes in glycerol concentration, both extracellular and intracellular, can be studied with the Glycerol-Glo™ Assay.

Triglyceride-Glo™ Assay

Product	Size	Cat.#
Triglyceride-Glo™ Assay	5ml	J3160
	50ml	J3161
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Triglyceride-Glo™ Assay is a bioluminescent assay for rapid and sensitive measurement of triglycerides in cultured cell lysates and other biological samples, such as cell culture medium, serum and tissue homogenates. The assay is ideal for measuring triglyceride accumulation and clearance in normal and pathological conditions. Examples include adipocytes, liver samples or cell culture liver models where excess triglyceride accumulation causes steatosis, an early hallmark of nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH).

Cholesterol/Cholesterol Ester-Glo™ Assay

Product	Size	Cat.#
Cholesterol/Cholesterol Ester-Glo™ Assay	5ml	J3190
	50ml	J3191
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Cholesterol/Cholesterol Ester-Glo™ Assay is a bioluminescent assay for rapid and sensitive method for measuring cholesterol and cholesterol esters in cultured cell lysates and other biological samples, such as lipoprotein fractions, cell culture medium, serum and tissue homogenates. Cholesterol is an essential lipid involved in steroidogenesis, bile acid synthesis, cell signaling and maintenance of membrane structure.

Maxwell® RSC Whole Blood DNA Kit—new size

Product	Size	Cat.#
Maxwell® RSC Whole Blood DNA Kit	144 preps	ASB1520
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC Whole Blood DNA Kit provides a simple, automated method for extraction of DNA from 50–500µl of whole blood samples using the Maxwell® RSC Instruments. The kit contains all the necessary reagents for DNA extraction from whole blood in a convenient prefilled cartridge format.

The Maxwell® RSC Instrument processes from 1 to 16 samples, and the Maxwell® RSC 48 processes from 1 to 48 samples, in a single run. Whole blood is added directly into well #1 of the cartridges (no preprocessing necessary), and purified DNA is ready for analysis in less than 40 minutes. Purified DNA can be used directly in a variety of downstream applications. The Maxwell® RSC Whole Blood DNA Kit is also compatible for use on the Maxwell® CSC Instrument in RUO Mode.

The Maxwell® Multi-Pack (Cat.# ASB1520) provides the Maxwell® Plungers in a 50/pk bag format and is not compatible with the Maxprep™ Liquid Handler for automated sample preprocessing.

Maxwell® RSC DNA FFPE Kit—new size

Product	Size	Cat.#
Maxwell® RSC DNA FFPE Kit	144 preps	ASB1450
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC DNA FFPE Kit is used with the Maxwell® RSC Instruments to provide an easy method for efficient, automated purification of genomic DNA (gDNA) from mammalian formalin-fixed, paraffin-embedded (FFPE) tissue samples. The kit does not require the use of hazardous organic solvents, such as xylene, ensuring a safer protocol for FFPE DNA extraction than other common methods.

The Maxwell® RSC Instrument can process from 1 to 16 samples, and the Maxwell® RSC 48 can process from 1 to 48 samples in a single run. The Maxwell® RSC Instruments are supplied with preprogrammed purification procedures and are designed for use with predispensed reagent cartridges, maximizing simplicity and convenience. Purified DNA is suitable for direct use in a variety of amplification-based downstream applications.

The Maxwell® Multi-Pack (Cat.# ASB1450) provides the Maxwell® Plungers in a 50/pk bag format and is not compatible with the Maxprep™ Liquid Handler for automated sample preprocessing.

Maxwell® RSC FFPE Plus DNA Kit for the Maxprep™ Liquid Handler

Product	Size	Cat.#
Maxwell® RSC FFPE Plus DNA Kit for the Maxprep™ Liquid Handler	48 preps	AS1770
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC FFPE Plus DNA Kit for the Maxprep™ Liquid Handler is used with Maxwell® and Maxprep™ Instruments to provide a simple method for efficient, automated purification of DNA (gDNA) from FFPE (formalin-fixed, paraffin-embedded) mammalian tissue samples. The Maxwell® Instruments are designed for use with predispensed reagent cartridges and preprogrammed purification processes, maximizing simplicity and convenience. Maxwell® methods for the RSC FFPE Plus DNA Kit can process from one to the maximum number of samples in as little as 25 minutes, following a 1 hour to overnight Proteinase K digestion. The purified DNA can be used directly in downstream amplification-based assays such as PCR.

Wizard® HMW DNA Extraction Kit

Product	Size	Cat.#
Wizard® HMW DNA Extraction Kit	50 preps	A2920
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Wizard® HMW DNA Extraction Kit is specifically designed to isolate high-molecular-weight (HMW) DNA that will provide strong performance in long-read sequencing. This kit helps researchers obtain DNA up to 500kb with high purity to get the most out of precious samples and can be used with a wide range of sample types, including whole blood, plant leaf, tissue culture cells and Gram-positive and Gram-negative bacteria. With a workflow that can be completed in approximately 1.5 hours without specialized equipment, the Wizard® HMW DNA Extraction Kit relieves many of the challenges regularly faced by researchers.

Maxwell® RSC Blood DNA Kit—new size

Product	Size	Cat.#
Maxwell® RSC Blood DNA Kit	144 preps	ASB1400
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC Blood DNA Kit is designed for optimal automated extraction of DNA from up to 300µl of whole blood samples using the Maxwell® RSC Instruments. This kit is optimized for maximum yield and purity of DNA from blood. The Maxwell® RSC Blood DNA Kit delivers buffy coat-like purity and concentration from whole blood and saves time with automation. The Maxwell® RSC Instrument can process from 1 to 16 samples and the Maxwell® RSC 48 can process from 1 to 48 samples in a single run.

Nucleic Acid Extraction
RNA Extraction

Maxwell® RSC simplyRNA Blood Kit—new size

Product	Size	Cat.#
Maxwell® RSC simplyRNA Blood Kit	144 preps	ASB1380
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC simplyRNA Blood Kit, used with the Maxwell® RSC Instruments, provides a simple method for automated RNA purification from 2.5ml of fresh whole blood. The low elution volume is used to generate concentrated high-quality RNA suitable for use in downstream applications such as quantitative RT-PCR. The kit provides the necessary reagents for processing the samples and uses prefilled cartridges for purification, maximizing simplicity and convenience. The Maxwell® RSC Instrument can process from 1 to 16 samples, and the Maxwell® RSC 48 Instrument can process from 1 to 48 samples, in about 50 minutes.

RNA extraction from blood can be used in quantitative RT-PCR, gene expression and translation assays.

The Maxwell® Multi-Pack (Cat.# ASB1380) provides the Maxwell® Plungers in a 50/pk bag format and is not compatible with the Maxprep™ Liquid Handler for automated sample preprocessing.

Nucleic Acid Extraction
Viral RNA and DNA Extraction

Viral RNA/DNA Concentration and Extraction Kits for Wastewater

Product	Size	Cat.#
Wizard® Enviro Total Nucleic Acid Kit	25 preps	A2991
Maxwell® RSC Enviro Total Nucleic Acid Kit	48 preps	AS1831
Binding Buffer 1 (BBD)	320ml	A2981
Binding Buffer 2 (BBE)	30ml	MC1501
Protease Solution	30ml	A1442
For Research Use Only. Not for Use in Diagnostic Procedures.		
Elution Buffer	50ml	A8281
Not For Medical Diagnostic Use.		

The Enviro Total Nucleic Acid Kits for Wastewater include reagents and consumables to concentrate and purify total nucleic acids (TNA) in one convenient kit. Our unique vacuum-based direct capture method simplifies sample processing by concentrating and capturing viral TNA quicker than precipitation methods without the use of cumbersome ultracentrifugation, while achieving high and consistent yield. The entire process from sample to purified TNA takes less than 2 hours and is scalable and adaptable to your needs. The process also removes most PCR inhibitors, so the resulting TNA can be used directly for amplification of SARS-CoV-2 RNA using the SARS-CoV-2 RT-qPCR Kit for Wastewater.

Maxwell® HT Viral TNA Kit, Custom

Product	Size	Cat.#
Maxwell® HT Viral TNA Kit, Custom	4 × 96 preps	AX2340
For Laboratory Use. Outside of the United States, this product is intended for research use only unless otherwise stated.		

Emergence of new viral diseases, including the coronavirus SARS-CoV-2 (COVID 19), MERS (2015) and SARS (2003) outbreaks, highlight the need for fast methods to detect and identify target viruses at scale. The Maxwell® HT Viral TNA Kit can be used for high-throughput, automated extraction of RNA and DNA from several sample types, including universal transport medium, serum, plasma and others. Samples are processed in 96-well plates using magnetic separation. The Maxwell® HT purification kit can also be used in manual protocols using a multichannel pipettor.

ReliaPrep™ Viral TNA Miniprep System, Custom

Product	Size	Cat.#
ReliaPrep™ Viral TNA Miniprep System, Custom	250 preps	AX4820
For Research Use Only. Not for Use in Diagnostic Procedures.		

The ReliaPrep™ Viral TNA Miniprep System uses spin columns for rapid centrifugation-based processing of viral samples. The system contains enough reagents for 250 extractions and can be used to successfully extract viral RNA from CSF, sputum and universal transport medium (UTM) for detection using qPCR assays.

Maxwell® CSC Viral Total Nucleic Acid Purification Kit

Product	Size	Cat.#
Maxwell® CSC Viral Total Nucleic Acid Purification Kit	48 preps	AS1780
For In Vitro Diagnostic Use. This product is only available in certain countries.		

The Maxwell® CSC Viral Total Nucleic Acid Purification Kit is designed for automated extraction of viral total nucleic acid (RNA and DNA) from serum, plasma or respiratory samples using the Maxwell® CSC Instruments. The Maxwell® CSC Instrument can process 1 to 16 samples, and the Maxwell® CSC 48 Instrument can process 1 to 48 samples in a single run. The kit contains all the necessary reagents in a convenient, prefilled cartridge. The sample preparation involves three main steps. First, Lysis Buffer and Proteinase K are mixed to prepare a lysis solution. Second, the lysis solution is mixed with sample. Third, the lysate is added into the cartridge and is ready for extraction on the Maxwell® CSC Instrument. Purified viral total nucleic acid is ready for analysis in approximately 45 minutes.

Maxwell® 16 Viral Total Nucleic Acid Purification Kit—new size

Product	Size	Cat.#
Maxwell® 16 Viral Total Nucleic Acid Purification Kit	144 preps	ASB1150
For Laboratory Use. Outside of the United States, this product is intended for research use only unless otherwise stated.		

The Maxwell® 16 Viral Total Nucleic Acid Purification Kit is used with the Maxwell® 16 Instrument to extract viral total nucleic acid (RNA and DNA) from serum or plasma samples. The kit contains all necessary reagents in convenient prefilled cartridges. The simple protocol involves three main steps. First, lysis buffer and proteinase K are mixed to prepare a lysis solution. Second, lysis solution is mixed with sample. Third, the lysate is added into the cartridges. Purified viral total nucleic acids are ready for analysis in approximately 45 minutes. Purified nucleic acids are ready for use in applications such as qPCR and qRT-PCR.

The Maxwell® System provides efficient processing and higher sample capacity than comparable systems, without detectable cross-contamination between samples, speeding sample processing and reducing rework.

Maxwell® RSC Viral Total Nucleic Acid Purification Kit—new size

Product	Size	Cat.#
Maxwell® RSC Viral Total Nucleic Acid Purification Kit	144 preps	ASB1330
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Maxwell® RSC Viral Total Nucleic Acid Purification Kit is designed for automated extraction of viral total nucleic acid (RNA and DNA) from serum, plasma or other samples using the Maxwell® RSC Instruments. These sample types are commonly processed in molecular microbiology or virology research areas. The kit works across a range of virus titers. The Maxwell® RSC Instrument can process from 1 to 16 samples and the Maxwell® RSC 48 can process from 1 to 48 samples in a single run. The kit contains all the necessary reagents in a convenient prefilled cartridge format. The simple protocol involves three main steps. First, lysis buffer and proteinase K are mixed to prepare a lysis solution. Second, lysis solution is mixed with sample. Third, the lysate is added into the cartridges. Purified viral total nucleic acids are ready for analysis in approximately 45 minutes. The Maxwell® RSC Viral Total Nucleic Acid Purification Kit is also compatible for use on the Maxwell® CSC Instrument in RUO Mode.

Luciferase Assays
Reporter Assays

Bioluminescence Applications Guide

Product	Size	Cat.#
Bioluminescence Applications Guide	1 each	LUC1991
For Research Use Only. Not for Use in Diagnostic Procedures.		

The *Bioluminescence Applications Guide* (162 pages) is designed to explain why you would choose bioluminescent assays, how they work and important things to consider when designing your experiments. This guide explores the fundamentals behind the various assays using firefly, *Renilla* and NanoLuc® luciferases and how users apply these assays to their research with special focus on GPCR biology, virology and targeted protein degradation. Each chapter is supported with links to articles, technical manuals, application notes, product selectors, videos, on-demand webinars, peer-reviewed R&D publications and citations for user applications. This guide will increase your awareness of what bioluminescent assays can do for you and help you design future experiments.

Sequencing
Sanger Sequencing

ProDye™ Terminator Sequencing System

Product	Size	Cat.#
ProDye™ Terminator Sequencing System	24 reactions	CR4324
	200 reactions	CR4302
	1,000 reactions	CR4310
Available Separately		
Product	**Size**	**Cat.#**
ProDye™ 4C Matrix Standard	5 preps	CR4500
ProDye™ Sanger Sequencing Standard	4 × 4 wells	CR4604
	2 × 96 wells	CR4696
ProDye™ 5X Sequencing Buffer	12ml	CR1011
For Research Use Only. Not for Use in Diagnostic Procedures.		

The ProDye™ Terminator Sequencing System provides an improved method of fluorescent Sanger sequencing using a proprietary thermostable DNA polymerase included in the master mix. Compatible with a variety of DNA templates, the ProDye™ Terminator Sequencing System can be used with the Spectrum Compact CE System as well as the Applied Biosystems® 3130, 3130*xl*, 3500, 3500xL, 3730, 3730*xl* and SeqStudio® Genetic Analyzers. The ProDye™ Terminator Sequencing System uses dTMR, dCXR, dRSixG and dROneTen terminator dyes, the same dyes contained in the BigDye® Terminator V3.1 Cycle Sequencing Kit.

The ProDye™ 4C Matrix Standard consists of DNA fragments labeled with four different fluorescent dyes (dTMR, dCXR, dRSixG and dROneTen) in one tube. Once generated, the spectral calibration file is applied during sample detection to calculate the spectral overlap and separate the raw fluorescent signals into individual color signals. The ProDye™ 4C Matrix Standard is used to perform a spectral calibration for color separation on the Spectrum Compact CE System and Applied Biosystems® 3130, 3130*xl*, 3500, 3500xL and SeqStudio™ Genetic Analyzers and was developed for use with the ProDye™ Terminator Sequencing System.

The ProDye™ Sanger Sequencing Standard contains DNA of a known sequence template (pGEM®-3Zf(+) partial sequence) for control reactions prepared with ProDye™ Terminator Sequencing System. It can be used to perform installation check, control sequencing run or spectral calibration on some CE platforms.

This sequence can also be downloaded from: www.promega.com/resources/vector-sequences/

The ProDye™ 5X Sequencing Buffer is optimized for use with the ProDye™ Terminator Sequencing System.

Section Contents

Table of Contents

Spectrum Compact CE System

Product	Cat.#
Spectrum Compact CE System, 4-Capillary	CE1304
Spectrum Compact CE System Starter Kit	CE1307
Spectrum Compact CE System Starter Kit with Service	CE1305
Not For Medical Diagnostic Use.	
Class 1 Laser Product	
Available Separately	
Product	**Cat.#**
Spectrum Compact CE Standard Service Agreement	SA6131
Spectrum Compact CE Premier Service Agreement	SA6132
Spectrum Compact CE Preventive Maintenance	SA6133
Spectrum Compact CE Installation & Operational Qualification	SA6134
Spectrum Compact CE Operational Qualification	SA6135
Spectrum Compact CE Premier Warranty Upgrade	SA6136

The Spectrum Compact CE System is an integrated and efficient instrument that brings you the independence to perform Sanger sequencing and fragment analysis in your laboratory, under your control, and at your convenience.

It is designed for use with existing sequencing chemistries using fluorescently labeled dideoxynucleotide triphosphate and 4-, 5- and 6-dye STR kits from Promega and other commercially available kits.

Upgrade your instrument's one-year warranty to the Premier Warranty. At the end of the first year, continue protecting your investment with the Standard or Premier Service Agreement. After the first year, maintain your instrument's performance with the Preventive Maintenance package.

The Installation Qualification (IQ) includes a series of instrument checks, delivers written documentation of functionality and demonstrates that everything ordered with the instrument is supplied and installed by a certified Promega representative. The Operational Qualification (OQ) service product demonstrates that the instrument functions according to its operational specifications. The IQ/OQ Package combines both services.

Spectrum Compact CE System Consumables

Product	Size	Cat.#
Spectrum Compact Buffer*	2 pairs	CE2300
Spectrum Compact Cathode Buffer Septa Mat**	10 each	CE2301
Spectrum Compact Cathode Buffer Retainer**	4 each	CE2302
Spectrum Compact Polymer4*	4 × 64 wells	CE2304
Spectrum Compact Polymer7*	4 × 64 wells	CE2307
Strip Septa Mat, 8-Well**	24 each	CE2308
Spectrum Compact Strip Base & Retainer, 32-Well**	4 each	CE2332
Capillary Array Preservation Buffer*	10ml	CE2399
Spectrum Compact Capillary Array, 4-Capillary, 36cm*	1 each	CE2340

*Not For Medical Diagnostic Use.

**For Research Use Only. Not for Use in Diagnostic Procedures.

Plug-and-play prefilled consumables with guided software user interface brings capillary electrophoresis capabilities to the hands of any researcher in the laboratory regardless of skill level or expertise.

The Spectrum Compact CE System is simple to set up and operate, with consumables like buffers and polymer prefilled in convenient packaging. Accessories such as plates, strip tubes and septa mats are also available for purchase.

The capillary array is positioned behind the oven door and lies flat against the oven, ensuring consistent capillary temperatures during electrophoresis.

Polymer4 is optimized for fragment analysis, and Polymer7 is optimized for Sanger sequencing, ensuring the best possible results.

All consumables use 2D bar coding to track key information.

Capillary Electrophoresis Workflows
Preprocessing and Differential Extraction

Casework Direct System

Product	Size	Cat.#
Casework Direct System	100ml	DC4560
	10ml	DC4561
Not For Medical Diagnostic Use.		

The sheer volume of property crime and sexual assault evidentiary samples submitted to forensic laboratories has compelled many laboratories to actively seek out better solutions for processing these challenging sample types. The Casework Direct System is designed to rapidly process swabs from casework samples or cuttings of sexual assault swabs and stained clothing.

Unlike competing kits, lysates generated with the Casework Direct System are compatible with our quantification and STR amplification product lines. These lysates may be amplified with the PowerQuant® or Plexor® HY Systems to screen sexual assault samples for male DNA and to normalize human template for STR amplification with one of the PowerPlex® STR Systems.

When used with the PowerQuant® System, valuable workflow information such as the presence/absence of male DNA, degradation or potential PCR inhibition is provided.

Capillary Electrophoresis Workflows
STR Amplification

Stabilizer Reagent

Product	Size	Cat.#
Stabilizer Reagent	500 preps	DM6571
For Research Use Only. Not for Use in Diagnostic Procedures.		

For use with Promega STR Systems, the Stabilizer Reagent is to be used in the loading cocktail when it is anticipated that samples will be stored in the injection plate for up to 48 hours prior to injection.

Massively Parallel Sequencing Workflows
Target Amplification and Library Prep

PowerSeq® 46GY System

Product	Size	Cat.#
PowerSeq® 46GY System	100 reactions	PS4600
Not For Medical Diagnostic Use.		

The PowerSeq® 46GY System contains reagents to amplify autosomal and Y-STR loci as small amplicons (140–300bp) that can be used to prepare MPS libraries and generate sequencing data compatible with Illumina® TruSeq® and MiSeq® technologies. With this workflow, both sequence and allele length polymorphism in the autosomal and Y-STR loci can be identified, thereby increasing the statistical power of inclusion. MPS also eliminates the problem of overlapping alleles completely, allowing us to target more alleles in the multiplex.

The combination of these STR loci and Amelogenin makes this multiplex an effective tool for human identification using MPS, while maintaining compatibility with existing databases worldwide. A combination of familiar markers in the PowerSeq® 46GY System and data analysis software package GeneMarker®HTS from SoftGenetics, LLC, offers a smooth transition to include MPS into your workflow, ensuring that you get the data you want.

Lab Automation
Maxwell® and Maxprep™ Instruments

Maxwell® CSC 48 Instrument

Product	Cat.#
Maxwell® CSC 48 Instrument	AS8000
For In Vitro Diagnostic Use. This product is only available in certain countries.	
Available Separately	
Product	**Cat.#**
Premier Warranty Upgrade	SA1450
Standard Service Agreement	SA1451
Premier Service Agreement	SA1452
Preventive Maintenance	SA1456
Installation Qualification	SA1457
Operational Qualification	SA1458
IQ/OQ Package	SA1459

The Maxwell® CSC 48 automated nucleic acid extraction system is an in vitro diagnostic medical device specifically designed for clinical laboratories processing multiple samples for critical downstream assays. Manufactured under cGMP, the consistent performance of the Maxwell® CSC 48 Instrument assures extraction of high-quality DNA or RNA from every run.

A truly versatile instrument with dual-mode software for performing extractions from IVD kits and chemistries in IVD mode, and extractions for a broad range of research applications when operated in the RUO mode.

Upgrade your instrument's one-year warranty to the Premier Warranty. At the end of the first year, continue protecting your investment with the Standard or Premier Service Agreement. After the first year, maintain your instrument's performance with the Preventive Maintenance package.

The Installation Qualification (IQ) includes a series of instrument checks, delivers written documentation of functionality and demonstrates that everything ordered with the instrument is supplied and installed. The Operational Qualification (OQ) service product demonstrates that the instrument functions according to its operational specifications. The IQ/OQ Package combines both services.

Maxprep™ Liquid Handler Accessories

Product	Size	Cat.#
Wireform Springs	25/pack	AS9460
For Research Use Only. Not for Use in Diagnostic Procedures.		

Accessory product for the Maxprep™ Liquid Handler.

Maxprep™ Liquid Handler Consumables

Product	Size	Cat.#
2.0ml Deep Well Plates (Non-Sterile)	60/pack	AS9309
For Research Use Only. Not for Use in Diagnostic Procedures.		

Consumable product for the Maxprep™ Liquid Handler.

Immunoassays
Lumit™ Immunoassays for Research

Lumit™ Immunoassay Cellular Systems

Product	Size	Cat.#
Lumit™ Immunoassay Cellular System—Starter Kit	200 assays	W1220
Lumit™ Immunoassay Cellular System—Set 1	100 assays	W1201
	1,000 assays	W1202
	10,000 assays	W1203
Lumit™ Immunoassay Cellular System—Set 2	100 assays	W1331
	1,000 assays	W1332
	10,000 assays	W1333
Lumit™ Immunoassay Lysis and Detection Kit	100 assays	W1231
	1,000 assays	W1232
	10,000 assays	W1233
Lumit™ Anti-Mouse Ab-LgBiT	30µl	W1021
	300µl	W1022
Lumit™ Anti-Mouse Ab-SmBiT	30µl	W1051
	300µl	W1052
Lumit™ Anti-Rabbit Ab-LgBiT	30µl	W1041
	300µl	W1042
Lumit™ Anti-Rabbit Ab-SmBiT	30µl	W1031
	300µl	W1032
Lumit™ Anti-Goat Ab-LgBiT	30µl	W1061
	300µl	W1062
Lumit™ Anti-Goat Ab-SmBiT	30µl	W1071
	300µl	W1072
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Lumit™ Immunoassay Cellular System is a no-wash bioluminescent immunoassay that measures target analytes directly in cell lysates. The assay can be adapted to detect any phosphoprotein, total protein or small molecule of interest, provided that appropriate primary antibodies (supplied by the user) are available.

Set 1: Lumit™ Anti-Mouse Ab-LgBiT/Lumit™ Anti-Rabbit Ab-SmBiT

Set 2: Lumit™ Anti-Mouse Ab-SmBiT/Lumit™ Anti-Rabbit Ab-LgBiT

Starter Kit: Includes all four Set 1 & Set 2 Lumit™ Secondary Antibodies

Section Contents

Table of Contents

Lumit™ Immunoassay Labeling Kit and Detection Reagents

Product	Size	Cat.#
Lumit™ Immunoassay Labeling Kit	1 each	VB2500
Lumit™ Immunoassay Detection Reagent A	500 assays	VB2010
	5,000 assays	VB2020
	50,000 assays	VB2030
Lumit™ Immunoassay Detection Reagent B	100 assays	VB4050
	1,000 assays	VB4060
For Research Use Only. Not for Use in Diagnostic Procedures.		

The Lumit™ Immunoassay Labeling Kit allows the users to label their antibodies and proteins with HaloTag®-SmBiT and HaloTag®-LgBiT to enable the development of a Lumit™ Immunoassay. The Lumit™ Detection Reagents A and B are specially designed to detect luminescence signal from Lumit™ Immunoassays when using labeled primary antibodies.

Lumit™ Immunoassays are based on NanoLuc® Binary Technology (NanoBiT®) technology. NanoBiT, a structural complementation reporter designed for biomolecular interaction studies, is composed of two subunits, Large BiT (LgBiT) and Small BiT (SmBiT) that have been optimized for stability and minimal self-association due to weak affinity. When these subunits are fused to two interacting proteins, the subunits come into close proximity, reassemble into the functional enzyme and 'report' on the interaction.

Lumit™ FcRn Binding Immunoassay

Product	Size	Cat.#
Lumit™ FcRn Binding Immunoassay	100 assays	W1151
	1,000 assays	W1152
Not For Medical Diagnostic Use.		

The Lumit™ FcRn Binding Immunoassay is a novel homogeneous (no-wash) competition assay to measure the interaction between human FcRn and Fc proteins, including antibodies. In the assay, a human IgG1 labeled with LgBiT (Tracer-LgBiT) is used as the tracer. A C-terminal biotinylated human FcRn bound to Streptavidin-SmBiT (hFcRn-Biotin-SA-SmBiT) is used as the target. In the absence of an antibody analyte sample, Tracer-LgBiT binds to the hFcRn-SmBiT target, resulting in maximum luminescence signal. In analyte samples, unlabeled IgG will compete with Tracer-LgBiT for binding to the FcRn target, resulting in a concentration-dependent decrease in luminescent signal.

The neonatal Fc receptor (FcRn) is expressed in the endosomal compartments of a variety of cell types, including vascular endothelium and antigen-presenting cells (APCs). FcRn binds to the Fc region of immunoglobulin G (IgG) antibodies at acidic pH within endosomes. In utero, FcRn acts to transfer maternal IgG to the developing fetus. In adults, it is involved in recycling of IgG and albumin. Recycling by FcRn is the primary reason for the long half-life (several weeks) of IgG and albumin in serum. Furthermore, a critical factor for the success of therapeutic antibodies is their extended half-life, which contributes to better efficacy and long dosing schedule. Therefore, the FcRn-IgG interaction is a key parameter to optimize and track throughout the antibody drug development process.

Immunoassays
Antibody Labeling

NanoLuc® Labeling System

Product	Size	Cat.#
NanoLuc® Labeling System	1 each	VB1500
For Research Use Only. Not for Use in Diagnostic Procedures.		

The NanoLuc® Labeling System is based on NanoLuc® luciferase, which is a small (19.1kDa), stable reporter enzyme that generates a bright luminescence signal. Using the NanoLuc® Labeling System, antibodies are chemically labeled with NanoLuc to be used in direct, competition and indirect immunoassays.

HaloTag® technology is used to label antibodies with NanoLuc® luciferase. HaloTag is a fusion protein that covalently binds its ligand (HaloTag® Ligand) under physiological conditions and has been used in variety of applications, including antibody labeling. Labeling is a two-step process in which amine-reactive HaloTag® Succinimidyl Ester (O4) Ligand (509Da) reacts with primary amines of lysine amino acids on the antibodies. For this reaction, antibodies should be in an amine-free buffer without any protein preservative.

Mass Spectrometry
Proteases and Surfactants

ProAlanase, Mass Spec Grade

Product	Size	Cat.#
ProAlanase, Mass Spec Grade	5µg	VA2161
	15µg	VA2171
For Research Use Only. Not for Use in Diagnostic Procedures.		

ProAlanase is an endoprotease that preferentially cleaves proteins on the C-terminal side of proline and, to a lesser extent, alanine amino acids. Isolated and purified from the fungus *Aspergillus niger*, ProAlanase is also known as An-PEP or EndoPro. Peptides derived from protein digestion with ProAlanase are suitable for identification and characterization by mass spectrometry.

Digestion with trypsin often provides incomplete sequence coverage or missed identification of post-translational modifications. Like Trypsin, alternative proteases such as Lys-C, Asp-N, Glu-C and Arg-C also cleave at charged residues, introducing bias to regions within proteins that are digested. The newest solution is ProAlanase, which cleaves at unique, non-charged sites in the proteome.

Mass Spectrometry
Trypsin

Trypsin Platinum, Mass Spectrometry Grade

Product	Size	Cat.#
Trypsin Platinum, Mass Spectrometry Grade	100µg	VA9000
For Research Use Only. Not for Use in Diagnostic Procedures.		

Trypsin Platinum, Mass Spectrometry Grade, is a recombinant protease designed for accurate protein characterization with mass spectrometry and reverse-phase high-performance liquid chromatography with UV detection (RP-HPLC-UV). It is free of any detectable nonspecific proteolytic activity. A novel chemical modification method assures maximal autoproteolytic resistance. Trypsin Platinum has high proteolytic efficiency and is free of contaminating proteins of animal origin.

Plate Readers
Microplate Readers

96-Well Sterile Microplates

Product	Size	Cat.#
96-Well Sterile Microplates	10/pack	E5650
For Research Use Only. Not for Use in Diagnostic Procedures.		

96-Well Sterile Microplates are recommended for luminescence detection of ATP.

Protein Detection
Protein Quantification

LgBiT Expression Vector and Stable Cell Line

Product	Size	Cat.#
LgBit Expression Vector	20µg	N2681
HEK293 LgBiT Stable Cell Line	1 each	N2672
For Research Use Only. Not for Use in Diagnostic Procedures.		

The HEK293 LgBiT Cell Line and LgBiT Expression Vector are reagents for constitutive intracellular expression of the LgBiT protein, which has a high-affinity interaction with the 11-amino-acid HiBiT tag to reconstitute the NanoBiT® enzyme. These intracellular LgBiT expression tools can be paired with HiBiT-tagged proteins expressed either transiently, stably or endogenously via CRISPR-Cas9 insertion for endpoint or kinetic real-time monitoring of HiBiT protein levels without cell lysis. Once HiBiT is expressed, NanoBiT® enzyme activity is detected with one of the Nano-Glo® Live Cell Substrates, which provide options that balance brightness and signal stability.

Intracellular LgBiT expression expands the HiBiT tag use to live-cell applications such as measuring real-time protein dynamics in disease models or after treating cells with targeted protein degraders, developing viral infectivity models or assays to monitor intracellular delivery of peptides or small molecules, and using HiBiT-tagged proteins as the energy donor in NanoBRET™ interaction assays.

Protein Detection
Protein Degradation

HaloPROTAC3

Product	Size	Cat.#
HaloPROTAC3	20µl	GA3110
ent-HaloPROTAC3	20µl	GA4110
For Research Use Only. Not for Use in Diagnostic Procedures.		

HaloPROTAC3 is a small-molecule degrader that specifically binds to and degrades HaloTag and its fusion partners in live cells and can be used to study the degradation of targets that would be challenging with target-specific PROTACs. HaloPROTAC3 binds irreversibly to HaloTag and HaloTag® target fusions, recruiting them via co-engagement with an E3 ligase component (VHL) to active E2/E3 ubiquitin ligase complexes and leading to ubiquitination and subsequent degradation by the proteasome.

The *ent*-HaloPROTAC3 is the enantiomeric compound of HaloPROTAC3 and serves as a negative control. *ent*-HaloPROTAC3 has the same molecular weight and general structure as HaloPROTAC3 but contains D-hydroxyproline and D-valine residue modifications allowing it to bind HaloTag but not VHL. Use *ent*-HaloPROTAC3 to confirm that degradation of the HaloTag® fusion protein is mediated through VHL engagement and the PROTAC mechanism.

Protein Detection
Primary and Secondary Antibodies

Anti-NanoLuc® and Anti-LgBiT Monoclonal Antibodies

Product	Size	Cat.#
Anti-NanoLuc® Monoclonal Antibody	100µg	N7000
Anti-LgBiT Monoclonal Antibody	100µg	N7100
For Research Use Only. Not for Use in Diagnostic Procedures.		

Anti-NanoLuc® Monoclonal Antibody can be used to detect NanoLuc® Luciferase or NanoLuc® fusion proteins by Western blotting. The Anti-NanoLuc® Antibody is a protein A/G affinity-purified mouse monoclonal antibody. For Western blotting, we recommend a concentration of 1µg/ml as a starting point for protocol optimization.

Anti-LgBiT Monoclonal Antibody is a protein A/G affinity-purified mouse monoclonal antibody that is used to detect Large BiT (LgBiT) and LgBiT fusion proteins via Western blotting. Weak cross-reactivity with NanoLuc® luciferase is observed. We recommend a concentration of 1µg/ml as a starting point for protocol optimization.

Protein Interactions

Live-Cell Protein Interactions

NanoBRET™ Degradation Starter Kits and NanoBRET™ Nano-Glo® Kinetic Reagent

Product	Size	Cat.#
NanoBRET™ Ubiquitination Starter Kit	1 each	ND2690
NanoBRET™ VHL Ternary Complex Starter Kit	1 each	ND2700
NanoBRET™ CRBN Ternary Complex Starter Kit	1 each	ND2720
NanoBRET™ Proteasomal Recruitment Starter Kit	1 each	ND2730
NanoBRET™ Nano-Glo® Kinetic Detection System	200 assays	N2583
	1,000 assays	N2584
	10,000 assays	N2585
For Research Use Only. Not for Use in Diagnostic Procedures.		

Regulating overall cellular protein homeostasis is critical for maintaining cell health and often altered by cellular treatments or disease states. Most proteins and their abundance are regulated via the ubiquitin proteasome system (UPS), which uses ubiquitin conjugation to signal proteins to be trafficked to the proteasome for degradation. Ubiquitination on any given target can vary in levels, mono- and poly-ubiquitination, and mediated through a variety of amino acid linkages.

The NanoBRET™ Ubiquitination Starter Kit provides the tools to create target-specific live-cell ubiquitin assays that globally measure all types of ubiquitination on a target protein. The assays can be used to measure dynamic increases or decreases in the relative levels of target protein ubiquitination following cellular treatments, such as small molecules or pathway inducers, that would influence protein stabilization or degradation, respectively. These assays can be particularly useful for studying targeted degradation compounds because the bioluminescent resonance energy transfer ratio of the NanoBRET™ signal means you can investigate protein ubiquitination while simultaneously monitoring target protein levels to assess degradation.

Targeted degradation via small molecule degraders such as PROTACs or molecular glues require forming a ternary complex that consists of target protein:degrader compound:E3 ligase component. Ternary complex formation is the first mechanistic step required for target ubiquitination and degradation via the ubiquitin proteasome pathway, representing a key step in optimizing effective degrader compounds. The NanoBRET™ Ternary Complex Starter Kits provide the tools to create target-specific assays for live-cell detection of complex formation with either the VHL (von Hippel-Lindau disease tumor suppressor) or CRBN (cereblon) E3 ligase components. These assays use NanoBRET™ technology, a proximity-based method dependent upon energy transfer from a luminescent donor target protein to a fluorescent acceptor and can be performed using either endpoint or kinetic format to monitor the rate and stability of complex formation. The ratio of the bioluminescent and fluorescent signal in the NanoBRET™ assay means you can measure ternary complex formation during target protein degradation and simultaneously monitor target protein levels.

HaloTag® Ubiquitin Proteasome System Fusion Vectors

Product	Size	Cat.#
HaloTag®-Ubiquitin Fusion Vector	20µg	N2721
HaloTag®-VHL Fusion Vector	20µg	N2731
HaloTag®-CRBN Fusion Vector	20µg	N2691
HaloTag®-PSMD3 Fusion Vector	20µg	N2701
NanoLuc®-BRD4 FL Fusion Vector	20µg	N1691
For Research Use Only. Not for Use in Diagnostic Procedures.		

Regulation of cellular protein homeostasis is critical for maintaining cell health and often altered by cellular treatments or disease states. The majority of proteins and their abundance are regulated via the ubiquitin proteasome system (UPS), which uses ubiquitin conjugation to signal proteins that should be trafficked to the proteasome for degradation. An emerging modality for small-molecule drug development is targeting proteins for degradation via the UPS with small-molecule degraders such as PROTACs or molecular glues.

The HaloTag® fusion vectors are designed to be used as the fluorescent acceptor in NanoBRET™ assays that monitor interactions of a specific target protein along the UPS pathway. NanoBRET™ technology is a proximity-based method dependent upon energy transfer from a luminescent donor target protein to a fluorescent acceptor. In these assays, the target protein fused to NanoLuc® luciferase or a subunit of NanoBiT® enzyme and serves as the bioluminescent BRET energy donor. The HaloTag® fusions are labeled with the fluorescent HaloTag® NanoBRET™ 618 Ligand and serve as the energy acceptor. When the donor and acceptor proteins interact, energy transfer occurs, resulting in increased NanoBRET™ signal.

Product Use Limitations, Warranty, Disclaimer

Promega manufactures products for a number of intended uses. Please refer to the product label for the intended use statements for specific products. Promega products contain chemicals which may be harmful if misused. Due care should be exercised with all Promega products to prevent direct human contact.

Each Promega product is shipped with documentation stating specifications and other technical information. Promega products are warranted to meet or exceed the stated specifications. Promega's sole obligation and the customer's sole remedy is limited to replacement of products free of charge in the event products fail to perform as warranted.

Promega makes no other warranty of any kind whatsoever, and SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES OF ANY KIND OR NATURE WHATSOEVER, DIRECTLY OR INDIRECTLY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, AS TO THE SUITABILITY, PRODUCTIVITY, DURABILITY, FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, CONDITION, OR ANY OTHER MATTER WITH RESPECT TO PROMEGA PRODUCTS.

In no event shall Promega be liable for claims for any other damages, whether direct, incidental, foreseeable, consequential, or special (including but not limited to loss of use, revenue or profit), whether based upon warranty, contract, tort (including negligence) or strict liability arising in connection with the sale of Promega products or the failure of Promega products to perform in accordance with the stated specifications.

Product claims are subject to change. Please contact Promega Technical Services (techserv@promega.com) or access the Promega online catalog (**www.promega.com**) for the most up-to-date information on Promega products.

Please visit the Promega online catalog (**www.promega.com**) to view patent and licensing information for individual products.

Applications mentioned in Promega literature are provided for informational purposes only. Promega does not warrant that all applications have been tested in Promega laboratories using Promega products.

Promega products labeled "For Laboratory Use" are intended For Research Use Only outside the United States.

Promega has used all commercially reasonable efforts to ensure that this catalog is accurate and free of errors. No claims may be derived from any printing or typing errors. Prices are in local currency as indicated. The prices contained herein exclude all taxes, handling fees and/or transportation costs. Contact Promega for exact information on these costs. Local terms and conditions may apply on sales and services. For the latest product pricing and related information visit: **www.promega.com** or contact your local Promega representative.

Please contact Promega for customized packaging or if you wish to order larger quantities.

Copyright

Prices and specifications subject to change without prior notice.

Trademarks

Trademarks referenced herein are either registered trademarks or trademarks of Promega Corporation in the U.S. and/or other countries. The names of actual companies and products mentioned herein and/or third party trademarks, trade names and logos contained herein may be the trademarks of their respective owners. Any rights not expressly granted herein are reserved.

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711-5399 *USA*
Tel: 608-274-4330
Fax: 608-277-2516
Toll-Free Tel: 800-356-9526
Toll-Free Fax: 800-356-1970
Internet: www.promega.com

Promega BioSciences, LLC
San Luis Obispo, CA, *USA*

Promega BioSystems, Inc.
Seoul, *South Korea*

Promega BioSystems Sunnyvale, Inc.
Sunnyvale, CA, *USA*

Shanghai Promega Biological Products, Ltd.
Shanghai, *China*

Terso Solutions, Inc.
Madison, WI, *USA*

Australia, *Sydney*
Tel: 02 8338 3800
Fax: 02 8338 3855
Freecall: 1800 225 123
Freefax: 1800 626 017
E-mail: auscustserv@promega.com

Brazil, *São Paulo*
Tel/Fax: +55 11 5096 3770
E-mail: promega.brasil@promega.com

China, *Beijing*
Tel: 010 5825 6268
Fax: 010 5825 6160
E-mail: info@promega.com.cn

France, *Lyon*
Tel: 04 37 22 50 00
Fax: 04 37 22 50 10
Numero Vert Client (gratuit): 0 800 48 79 99
E-mail: contactfr@promega.com
Numero Vert Technique (gratuit): 0 800 48 80 00
E-mail: supportfr@promega.com

Germany/Austria/Poland/ Central Eastern Europe, Walldorf
Tel (D, AT, CEE): +49 6227 6906 0
Tel (PL): +48 22 531 06 67
Fax (D, AT, CEE): +49 6227 6906 222
Fax (PL): +48 22 531 06 69
E-mail (D, AT): de_custserv@promega.com
E-mail (PL): pl_custserv@promega.com
E-mail (CEE): de_ceesales@promega.com

India, *New Delhi*
Tel: +91 11 43005814/15
Fax: +91 11 41035028
E-mail: ind_custserv@promega.com

Italy, *Milan*
Tel: 02 54 05 01 94
Fax: 02 56 56 16 45
Numero Verde: 800 69 18 18
E-mail: customerservice.italia@promega.com

Japan, *Tokyo*
Tel: 03 3669 7981
Fax: 03 3669 7982
E-mail: prometec@jp.promega.com

Korea, *Seoul*
Tel: 82 1588 3718
Fax: 82 2 2638 5418
E-mail: custserviceKR@promega.com

Belgium/Luxembourg/ The Netherlands, *Leiden*
Tel: +31 (0)71-532 42 44
Fax: +31 (0)71-532 49 07
E-mail: benelux@promega.com

Pacific Asia Region, *Singapore*
Tel: +65 65133450
Fax: +65 67735210
E-mail: sg_custserv@promega.com

Spain, *Madrid*
Tel: +34 916 621 126
Fax: +34 916 615 835
E-mail: esp_custserv@promega.com

Nordic Region, Sweden, *Stockholm*
Tel: +46 8 452 2450
Fax: +46 8 452 2455
E-mail: sweorder@promega.com

Switzerland, *Dübendorf*
Customer Service
Tel: 044 878 90 00
Fax: 044 878 90 10
E-mail: ch_custserv@promega.com
Technical Service
Tel: 044 878 90 20
E-mail: ch_techserv@promega.com

United Kingdom, *Southampton*
Tel: 023 8076 0225
Fax: 023 8076 7014
Free Phone: 0800 378994
Free Fax: 0800 181037
E-mail: ukcustserve@promega.com

Part #CA032

Promega

2800 Woods Hollow Road
Madison, WI 53711-5399 USA

Change Service Requested