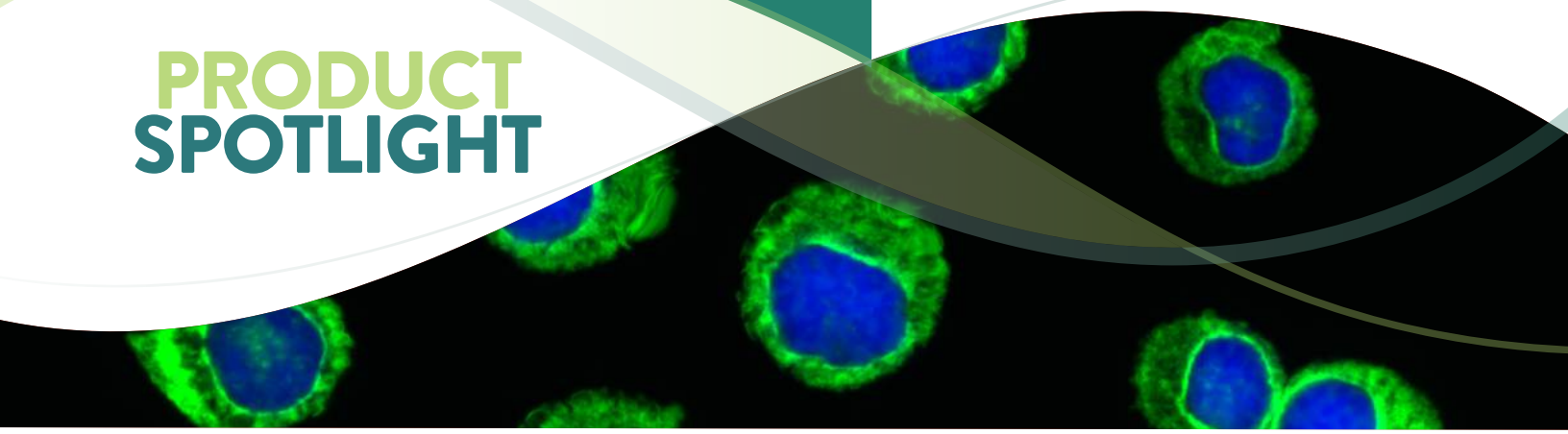
ATCC

PRODUCT SPOTLIGHT



THP-1 REPORTER CELLS

The lack of stable and sensitive advanced immunology cell-based models to evaluate immune activation has hindered immune-oncology research and development for decades. To address this need, ATCC introduced luciferase reporters containing the response element of immunologically important transcription factors into the THP-1 cell line. The THP-1 LUC2 cell lines provide a means to confidently measure immune modulation for all your drug discovery and development efforts. Originating from a spontaneously immortalized human monocyte-like cell line that naturally expresses many pattern-recognition and cytokine receptors, ATCC THP-1 LUC2 cells represent the most physiologically relevant model to aid advancements in immuno-oncology and immune disorders.

Key Features	Key Benefits
Fully authenticated parental THP-1 cell line	No concerns about cross-contamination and misidentification, saves time and money
High signal-to-noise ratio	Clear and more intense results, straightforward data analysis
Verified, characterized stable expression	Reduced variability, reproducible results
Easy to culture, robust, and highly sensitive	Ease of use, customer convenience
Amenable to complex experimentation (combinatorial stimulation, co-culture)	Versatile and compatible with multiple platforms
High density cryopreservation	More viable cells post-thaw

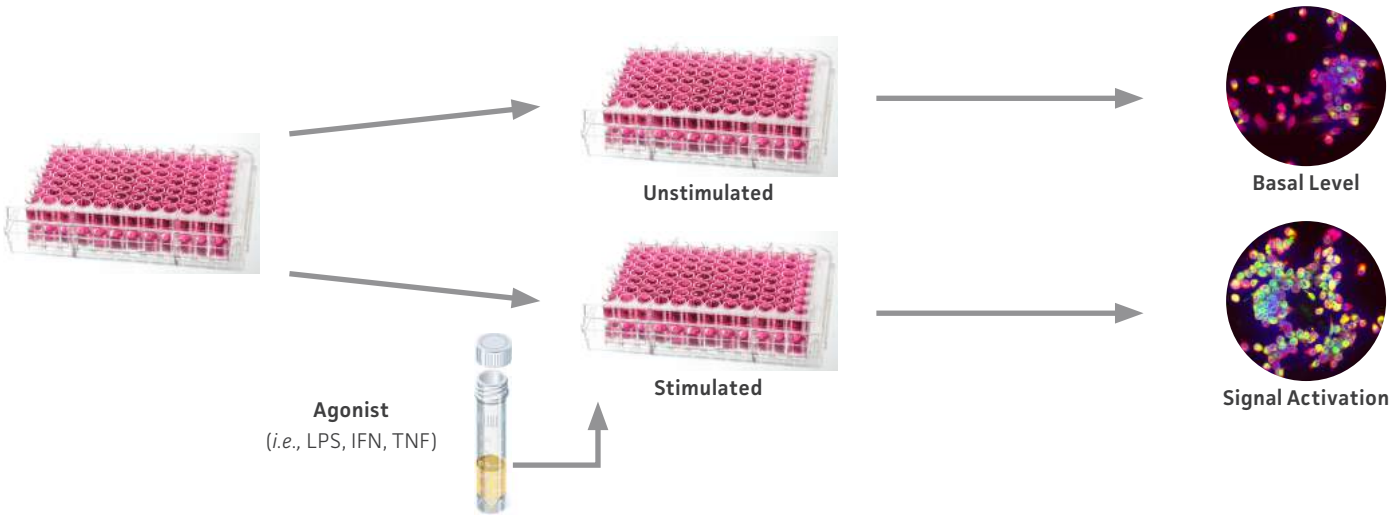


Figure 1: Quantitation of immunomodulation made easy. To use THP-1 LUC2 cells, simply seed in a 96-well plate. Stimulate the cells overnight with your compound of interest, then incubate the cells using a luciferase assay system and read the bioluminescence signals using a luminometer. Your immunomodulation data will be bigger, brighter, better.

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Table 1: Available THP-1 LUC2 reporter cell lines

Response Element	ATCC No.	Signaling Pathway	Function
NFκB	TIB-202-NFκB-LUC2™	NFκB	Pivotal mediator of inflammatory response
GAS	TIB-202-GAS-LUC2™	JAK-STAT (Type II)	Initiates immune cell activation and recruitment
CRE	TIB-202-CRE-LUC2™	cAMP/PKA	Inflammatory mediator and phagocytosis modulator
ISRE	TIB-202-ISRE-LUC2™	JAK-STAT (Type I)	Initiates immune cell activation and recruitment
AP1	TIB-202-AP1-LUC2™	MAPK/ERK	Regulates innate and adaptive immune response
NFAT	TIB-202-NFAT-LUC2™	Calcineurin-NFAT	Mediates adaptive T and B cell activation

These high-quality cell lines are well suited to study the role of proteins involved in signaling cascades activated by immunomodulators, to optimize the MoA, pharmaceutical potency, and/or toxicological profile of leading drug candidates, and to evaluate the efficacy or toxicity of promising drug compounds in vitro assays.

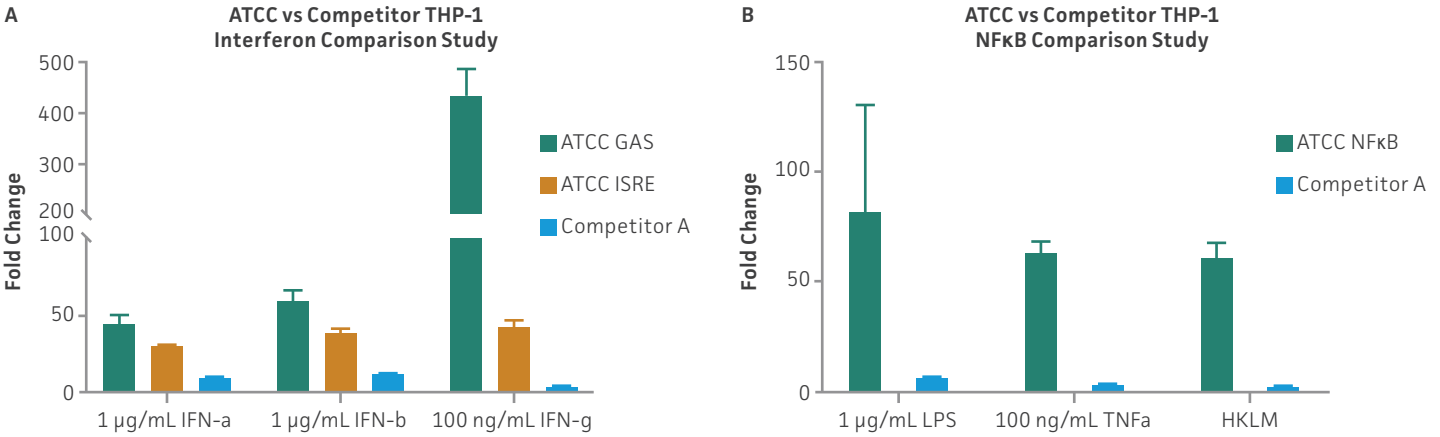

Figure 2: Comparison of luminescence and in vitro quantification of luciferase activity of THP-1 LUC2 and competitor reporter cell lines. Cells were seeded in a 96-well plate. After overnight stimulation with the appropriate interferons, bioluminescence signals were detected using Bright-Glo™ (Promega®) and a luminometer. Error bars show standard deviation (n=3). Panel (A) shows ATCC® THP-1 GAS-Luc2 (orange bar), THP-1 ISRE-Luc2 (yellow bar), or competitor immune regulator expression cells (green bar) stimulated with the indicated interferons and assessed for bioluminescence. Panel (B) shows ATCC® THP-1 NFkB-Luc2 (orange bar) or competitor immune regulator expression cells (green bar) treated with the indicated toll-like receptor agonists and assessed for bioluminescence intensity. In both studies, THP-1 luciferase-expressing cells exhibited enhanced bioluminescence signal compared to the competitor cells.