

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 |

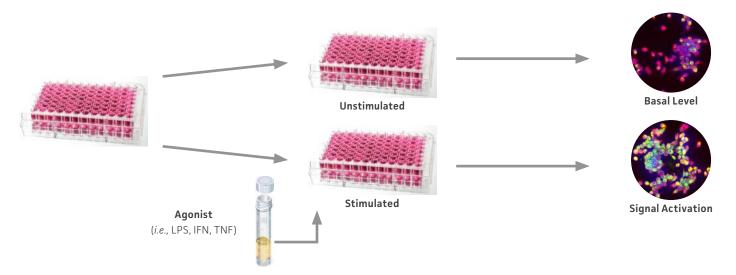


Figure 1: Quantitation of immunomodulation made easy. To use THP-1 LUC2 cells, simply seed in a 96-well plate. Stimulate the cells overnight with your compound of interest, then incubate the cells using a luciferase assay system and read the bioluminescence signals using a luminometer. Your immunomodulation 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 |
|------------------|--------------------|--------------------|--------------------------------------------------|
| NFĸB | TIB-202-NFκB-LUC2™ | NFĸB | 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.

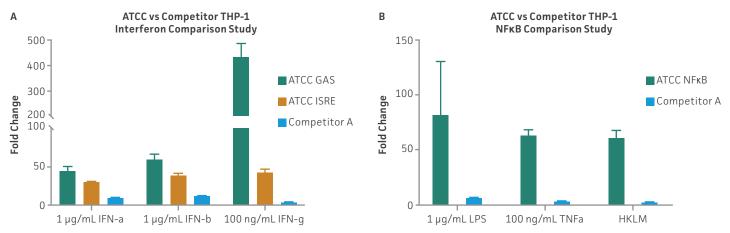


Figure 2: Comparison of luminescence and in vitro quantification of luciferase activity of THP-1 LUC2 and competitor reporter cell lines. Cells were seeded in a 96-well plate. After overnight stimulation with the appropriate interferons, bioluminescence signals were detected using Bright-Glo™ (Promega®) 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.

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| [경남] 바이오드림(주) | T. 055-762-8059 | [충북] (주)중수과학 | T. 043-235-2300 |

T. 054-745-1397



[울산/포항/경주] 피엘에스

홈페이지:www.korambiotech.com 학술문의: tech@korambiotech.com 전화: 02-556-0311

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