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Technical Data Sheet: MJ NFAT-Luc2

ATCC® Number	CRL-8294-NFAT-LUC2™
Organism	Homo sapiens
Tissue/Disease Source	T-cell; Lymphoma
Product Description	The MJ cell line (ATCC CRL-8294) is commonly used in immuno-oncology research and endogenously expresses a high level of TIGIT, GITR, OX40, and ICOS. This luciferase reporter cell line was derived from the parental line CRL-8294 by stably expressing the firefly luciferase gene (luc2) under control of a nuclear factor of activated T-cells (NFAT) promoter. This cell line was established through lentiviral transduction and single cell cloning. The cells, upon stimulation with PMA and ionomycin, express high levels of enzymatically active luciferase protein, which can be detected via in vitro bioluminescence assays. This reporter cell line is useful for monitoring the activity of NFAT signaling pathways that regulate a wide range of cell responses including immune cell activation.
Application	Enabling sensitive and quantitative assessment of signal transduction makes this reporter cell line ideal for in vitro bioluminescence assays to study immune response in cell lines overexpressing TIGIT, GITR, OX40, and ICOS, development of new drugs, and safety evaluation of new chemicals and drugs.

In vitro activation of luciferase expression by PMA and Ionomycin

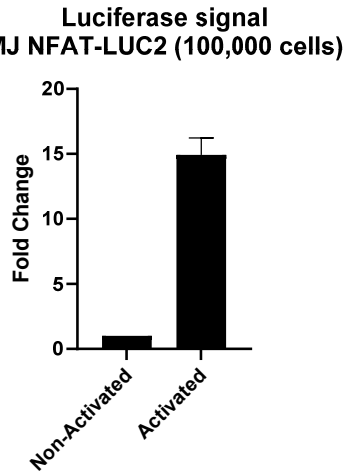

Figure 1. In vitro activation of luciferase expression by PMA and Ionomycin. Luciferase expression from MJ cells upon signaling activation by stimulation with 50 ng/mL of PMA and 10 µg/mL of Ionomycin to activate luciferase expression after 4 hours incubation to demonstrate response sensitivity in NFAT response element. N=3

Expression of TIGIT, GITR, ICOS, and OX40

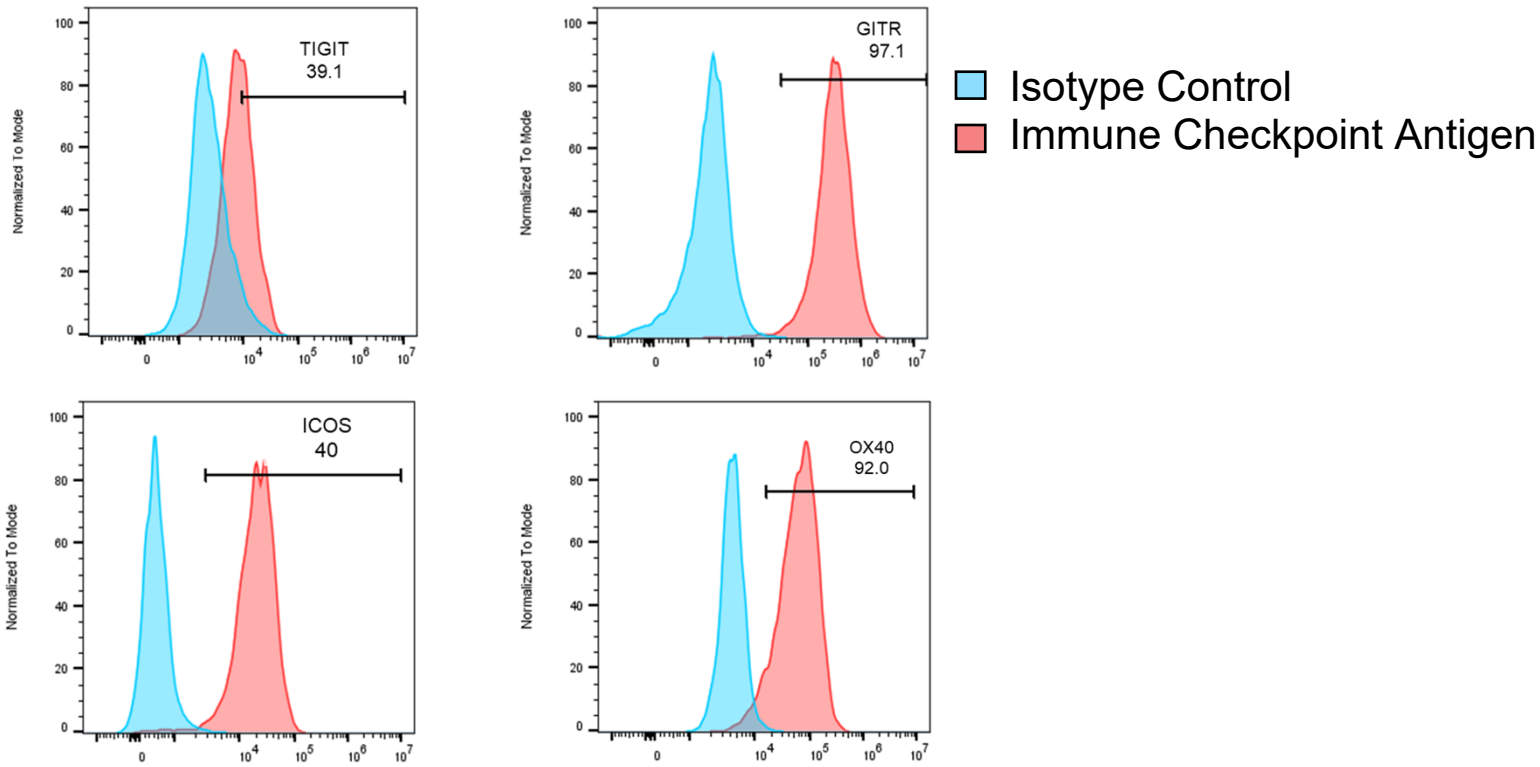

Figure 2. Expression of TIGIT, GITR, ICOS, and OX40. Flow cytometry analysis was performed to assess the antigen expression levels of TIGIT (Upper Left), GITR (Upper Right), ICOS (Lower Left), and OX40 (Upper Right) on the tumor cell line compared to isotype controls (blue).

Cell Morphology

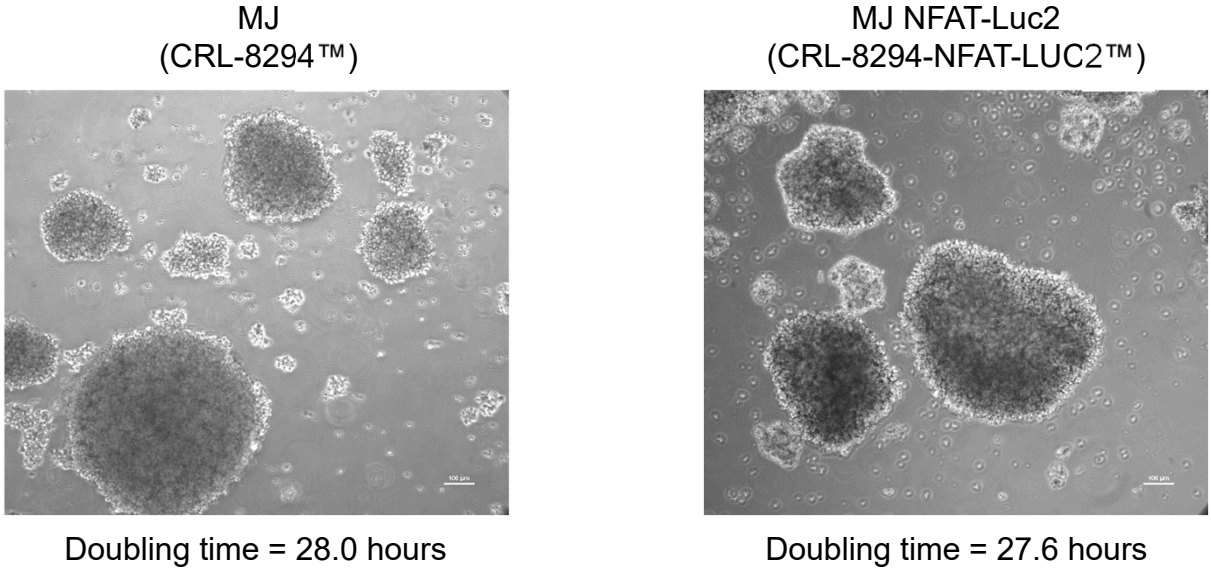

Figure 3: Cell morphology of MJ parental and MJ NFAT-Luc2. Cells were maintained in ATCC recommended culture conditions. Cell morphology was observed under microscopy and images were captured by digital camera.