

NFAT-Luc/Jurkat

CBP74025

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I. Background

The nuclear factor of activator T cells (NFAT) family of transcription factors plays an important role in immune response. T cell activation through the T cell synapse results in calcium influx. Increased intracellular calcium levels activate the calcium-sensitive phosphatase, calcineurin, which rapidly dephosphorylates the serine-rich region (SRR) and SP-repeats in the amino termini of NFAT proteins. This results in a conformational change that exposes a nuclear localization signal promoting NFAT nuclear import. In the nucleus, NFAT proteins cooperate with other proteins to bind to DNA.

II. Description

The NFAT Reporter – Jurkat Cell Line contains a firefly luciferase gene under the control of the NFAT response element stably integrated into Jurkat cells. The NFAT Reporter cell line has been validated for response to thapsigargin, ionomycin, and phorbol 12-myristate 13-acetate (PMA). It is useful as a control cell line for other NFAT reporter cell lines expressing various immune checkpoint receptors.



III. Introduction

Host Cell: Jurkat

Expressed gene: NFAT-Luciferase

Stability: 32 passages (in-house test, that not means the cell line will be instable beyond the passages we tested.)

Synonym(s): Nuclear factor of activated T cells; T cell

Freeze Medium: 90% FBS+10% DMSO

Culture Medium: RPMI-1640+10%FBS+800ug/ml hygromycin

Mycoplasma Testing: Negative

Storage: Liquid nitrogen

Application(s): Functional(Report Gene) Assay

IV. Description of Host Cell Line

Organism: Homo sapiens, human

Tissue: Peripheral blood

Disease: Acute T cell leukemia

Morphology: Lymphoblast

Growth Properties: Suspension

V. Representative Data



Induction of NFAT activity by PMA with Ionomycin in Jurkat-NFAT Luciferase Reporter Cell

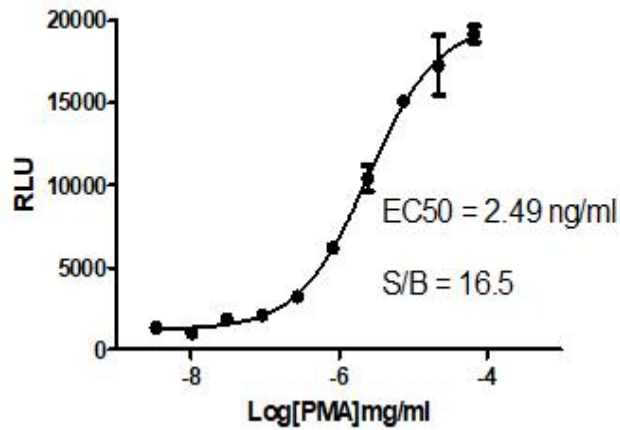


Figure 1. Detect Luciferase assay by Ultra Luciferase Detection Kit CBPH0001 (we strongly suggest to purchase from Cobioer). Jurkat/NFAT Luciferase Reporter cells were stimulated by Ionomycin, the S/B was 16.5-fold.

