

Product Data Sheet

Product Name: ChX710
Cat. No.: GC34329

Chemical Properties

Cas. No. 2438721-44-7

SMILES O=C(NC(C)CN(C)C)C1=C(N=C(C2=CC=NC=C2)N3)C3=CC=C1

Formula $C_{18}H_{21}N_5O$ M.Wt 323.39

Solubility DMSO : 20 mg/mL (61.84 mM) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

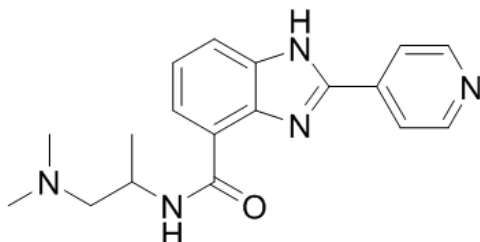
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Protocol

Cell experiment [1]:

Cell lines	HEK-293T (human embryonic kidney epithelial cells), A549 (human lung epithelial adenocarcinoma cells), MRC5 (human lung fibroblasts), Vero (African green monkey kidney epithelial cells), and primary human peripheral blood mononuclear cells (PBMCs)
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Preparation Method Reporter cell lines (e.g., STING-37, a HEK-293 cell line stably expressing luciferase under the control of ISRE) or other cell types were cultured in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% fetal calf serum (FCS), penicillin, and streptomycin at 37°C and 5% CO₂. Cells were treated with ChX710 (6-50µM) or related compounds for specified durations. For synergy experiments, cells were co-treated with ChX710 and transfected with plasmid DNA or stimulated with 2',3'-cGAMP using JetPrime transfection reagent.

Reaction Conditions 6-50µM; 8-48 hours.

Applications ChX710 specifically activates the Interferon-Stimulated Response Element (ISRE) promoter. This activation is dependent on the adaptor protein MAVS and the transcription factor IRF1, but independent of STAT1/STAT2. ChX710 induces phosphorylation of IRF3 but is insufficient to trigger type I interferon (IFN-α/β) secretion on its own. ChX710 induces a modest, cell-type-specific profile of Interferon-Stimulated Genes (ISGs). Crucially, ChX710 potently primes and synergistically enhances the cellular type I interferon response to cytosolic (transfected) DNA, leading to a strong, STING-dependent increase in IFN-β secretion and ISG expression. ChX710 exhibits significant cytotoxicity at higher concentrations, reducing cellular ATP levels and viability.

References:

[1] Khier S, Lucas-Hourani M, Nisole S, et al. Identification of a small molecule that primes the type I interferon response to cytosolic DNA. Sci Rep. 2017 May 31;7(1):2561.

Background

ChX710 is a small-molecule compound that primes the type I interferon response to cytosolic DNA. ChX710 induces the interferon-stimulated response element (ISRE) promoter, specific interferon-

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stimulated genes (ISGs), and phosphorylation of interferon regulatory factor (IRF)3, effectively priming the cellular response to DNA transfection via the STING pathway^[1].

In vitro, ChX710 (6–50 μ M) was applied to cell lines such as HEK-293 for 8–48 hours. ChX710 specifically activates the ISRE promoter and induces phosphorylation of IRF3. ChX710 effectively enhances the cellular type I interferon response to cytosolic (transfected) DNA, leading to increased IFN- β secretion. At higher concentrations (25–50 μ M), ChX710 exhibits significant cytotoxicity, reducing cellular ATP levels and viability^[1].

References:

[1] Khiar S, Lucas-Hourani M, Nisole S, et al. Identification of a small molecule that primes the type I interferon response to cytosolic DNA. Sci Rep. 2017 May 31;7(1):2561.

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