
Product Data Sheet

Product Name: Casein Kinase II Inhibitor IV Hydrochloride

Cat. No.: GC34356

Chemical Properties

Cas. No. 2320347-54-2

SMILES N#CCCC1=CC=CC(N2C=CC3=CN=C(NC4=CC(OC)=C(OC)C(OC)=C4)N=C32)=C1.Cl

Formula $C_{24}H_{24}ClN_5O_3$ M.Wt 465.93

Solubility Soluble in DMSO 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.

Structure

Protocol

Kinase experiment:

For reporter gene assays with transiently transfected cells, the cells are typically transfected in 150 mm-diam dishes when 30-40% confluent. A reporter plasmid, pGL3/3.7 kbp-IVLLuc plasmid, is transfected into the human epidermal keratinocytes (NHEKs). After 24 h, the transfected cells are plated into 96-well assay plates and treated with Casein Kinase II Inhibitor IV to a final concentration of 5 μ M. After incubation for 2 d, reporter gene activity is measured using the Bright-Glo luciferase assay system[1].

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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References:

[1]. Hong J, et al. Identification and characterization of small-molecule inducers of epidermal keratinocyte differentiation. ACS Chem Biol. 2007 Mar 20;2(3):171-5.

Background

Casein Kinase II Inhibitor IV Hydrochloride is a small-molecule inducer of epidermal keratinocyte differentiation.

Treatment of human epidermal keratinocytes (NHEKs) with Casein Kinase II Inhibitor IV leads to an increase in the early differentiation markers keratins 1 and 10 at 48 h. Increased levels of IVL and TGM are observed in cells treated with Casein Kinase II Inhibitor IV at 72 h and persisted at 96 h. In addition, treated with Casein Kinase II Inhibitor IV expresses loricrin, a terminal differentiation marker, at later time points. Similar results are observed by messenger RNA (mRNA) expression analysis of NHEKs treated with Casein Kinase II Inhibitor IV. At early time points (12 and 24 h), treatment with Casein Kinase II Inhibitor IV leads to the upregulation of keratinocyte early differentiation marker genes, including keratin 1 (5.4-fold) and keratin 10 (5.4-fold). Terminal differentiation marker genes, including IVL (1.8-fold), TGM 1 (4.8-fold), loricrin (3.3-fold), and filaggrin (5.6-fold), are upregulated at late time points (36 and 48 h). These results are consistent with the ability of Casein Kinase II Inhibitor IV to induce differentiation of epidermal progenitor cells into terminally differentiated keratinocytes[1].

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