
Product Data Sheet

Product Name: ARN14974

Cat. No.: GC13263

Chemical Properties

Cas. No. 1644158-57-5

Chemical Name 6-(4-fluorophenyl)-2-oxo-N-(4-phenylbutyl)-3(2H)-benzoxazolecarboxamide

SMILES FC(C=C1)=CC=C1C2=CC=C3C(OC(N3C(NCCCCC4=CC=CC=C4)=O)=O)=O=C2

Formula $C_{24}H_{21}FN_2O_3$ M.Wt 404.4

Solubility $\leq 2\text{mg/ml}$ in DMSO; 2mg/ml in dimethyl formamide 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

Background

IC50: 79 nM

ARN14974 is an acid ceramidase inhibitor.

The ceramides, a family of bioactive lipid-derived messengers, are involved in the control of cellular senescence, inflammation, as well as apoptosis. Ceramide hydrolysis by acid ceramidase (AC) can stop the biological activity of these substances and influence survival and function of normal and neoplastic cells.

In vitro: In a previous study, human colon adenocarcinoma SW403 cells and mouse macrophage-like Raw 264.7 cells were incubated in the presence of ARN14974. Results showed that ARN14974 could inhibit cellular AC activity with an IC50 of 825 nM in SW403 and 400 nM in Raw 264.7 cells. Moreover, consistent with these results, incubation with ARN14974 led to an increase in the levels of ceramide and a corresponding decrease in the levels of sphingosine [1].

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

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In vivo: Injection of ARN14974 in mice was able to cause a substantial reduction in AC activity in multiple organs, including heart, lungs, brain, liver, and kidney. Highest levels of baseline AC activity and AC inhibition were found in lung tissue. As expected, the authors found a significant increase in ceramide species. Moreover, the levels of ceramides with longer fatty acyl chains were not affected. Furthermore, ARN14974 appeared to be well tolerated at the dosage tested [1].

Clinical trial: So far, no clinical study has been conducted.

Reference:

[1] D. Pizzirani, A. Bach, N. Realini, et al. Benzoxazolone carboxamides: Potent and systemically active inhibitors of intracellular acid ceramidase. *Angewandte Chemistry International Edition English* 54(2), 485-489 (2014).

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