Product Data Sheet

Product Name: KC02
Cat. No.: GC13023

Chemical Properties

Cas. No.	1646795-60-9		
Chemical Name	6-(2-oxo-4-tridecyloxetan-3-yl)hexanamide		
SMILES	CCCCCCCCCCCCCC1OC(C1CCCCCC(N)=O)=O		
Formula	$C_{22}H_{41}NO_3$	M.Wt	367.57
Solubility	DMF: 5 mg/ml,DMSO: 5 mg/ml,Ethanol: 16 mg/ml,Ethanol:PBS(pH 7.2) (1:5): 0.5 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	KC02		

Background

KC02 is a structural analog of KC01 and inactive form of KC01.
The synthesis of KC02 consistently yielded a 4:1 mixture of Z/E isomers, which proved difficult to chromatographically separate. By competitive gel-based ABPP assys, KC02 inhibited ABHD16A (human and mouse) with IC50 value of >10μM, while KC01 is in range of nM. By PS substrate assays, KC02 inhibited human ABHD16A with IC50 value of > 10μM, while KC01 is in range of nM.
Most of these enzymes were also inhibited by the control probe KC02, with the exception of two partial off-targets, ABHD3 and ABHD13. KC02 also inhibited ABHD11 (94%) and LYPLA1 (63%) but did not substantially inhibit ABHD16A (<30%). In situ treatment with KC01 (1μM, 4 h) but not KC02 (1μM, 4 h) blocked the PS lipase activity of membrane fractions from COLO205, K562 and MCF7 cell lines. KC01 and KC02 constitute a suitable pair of active and inactive (control) probes to investigate the function of

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ABHD16A in cellular systems. Treatment with KC01 but not KC02 (1μM, 4 h) substantially lowered secreted lyso-PSs of the ABHD12-null LCL. All LCLs also showed decreased cellular lyso-PSs following treatment with KC01 but not KC02. KC01 but not KC02 elevated PS lipase activity and reduced in lyso-PS lipase activity in LPS-stimulated macrophages. The LPS-induced increases in lyso-PS and cytokine secretion were both blocked by pretreatment of Abhd12−/− macrophages with KC01 (1μM, 4 h) but not KC02 (1μM, 4 h).

In COLO205 cells, 1μM KC01 but not KC02 showed substantial reductions in the levels of all detected cellular lyso-PSs compared to DMSO-treated control cells. The levels of secreted lyso-PSs (18:1 and 18:0) were also decreased in COLO205 cells treated with KC01 compared to those in KC02- or DMSO-treated cells (4-h treatments of cells in serum-free medium), whereas levels of other secreted lipids (lyso-PCs, lyso-PEs and MAGs) were unchanged across these treatment groups.

KC01, but not KC02, inhibited the PS lipase activity of brain membrane lysates from 2-month-old Abhd12+/+ and Abhd12−/− mice.

Reference:

1.Kamat SS, Camara K2, Parsons WH et al. Immunomodulatory lysophosphatidylserines are regulated by ABHD16A and ABHD12 interplay. Nat Chem Biol. 2015 Feb;11(2):164-71.

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