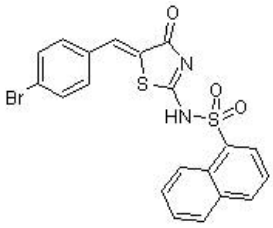
abcam

Product datasheet

Pitstop® 2, Novel cell-permeable clathrin inhibitor ab120687

108 References 3 Images

Overview

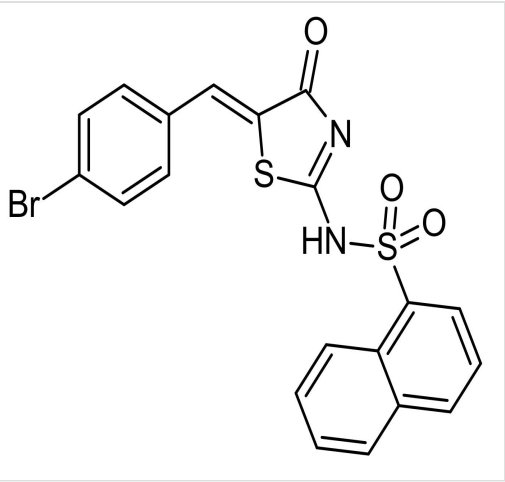
Product name	Pitstop® 2, Novel cell-permeable clathrin inhibitor
Description	Novel, selective cell-permeable clathrin inhibitor
Biological description	Novel, selective, cell membrane permeable clathrin inhibitor. Competitively inhibits clathrin terminal domain to selectively inhibit clathrin mediated endocytosis (CME) (IC_{50} = 12 µM for inhibition of amphiphysin association of clathrin TD). Interferes with receptor mediated endocytosis (RME), entry of HIV and synaptic vesicle recycling.
Purity	> 98%
General notes	High concentrations of Pitstop 2™ may interfere with fluorescence imaging due to a low emittance of the compound in the green channel. This fluorescence is not usually detectable if the cells have been first fixed and washed prior to imaging. Sold under exclusive licence from Children's Medical Research Institute and Newcastle Innovation Ltd. Pitstop® is a trademark of Freie Universitat Berlin, Newcastle Innovation Ltd. and Children's Medical Research Institute.
CAS Number	1419320-73-2
Chemical structure	

Properties

Chemical name	*N*-[5-(4-Bromobenzylidene)-4-oxo-4,5-dihydro-1,3-thiazol-2-yl]naphthalene-1-sulfonamide
Molecular weight	473.36
Molecular formula	$C_{20}H_{13}BrN_2O_3S_2$
PubChem identifier	137254289
Storage instructions	Store at +4°C. Store under desiccating conditions. The product can be stored for up to 12 months.

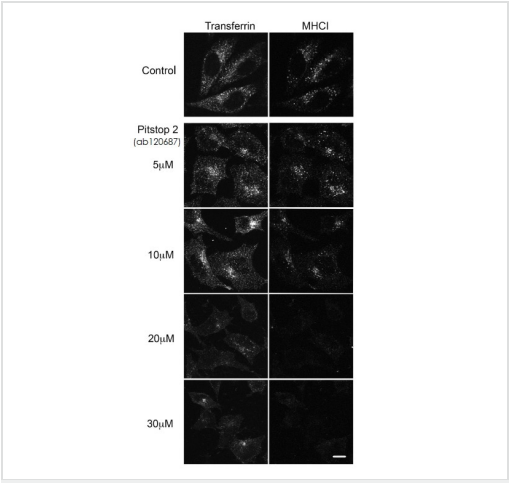
Solubility overview	Soluble in DMSO. Please refer to the Protocol Booklet for more information.
Handling	Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one month. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour. Need more advice on solubility, usage and handling? Please visit our **frequently asked questions (FAQ) page** for more details.
SMILES	C1=CC=C2C(=C1)C=CC=C2S(=O)(=O)N=C3NC(=O)/C(=C/C4=CC=C(C=C4)Br)/S3
Source	Synthetic

Images



Chemical Structure - Pitstop® 2, Novel cell-permeable clathrin inhibitor (ab120687)

2D chemical structure image of ab120687, Pitstop® 2, Novel cell-permeable clathrin inhibitor

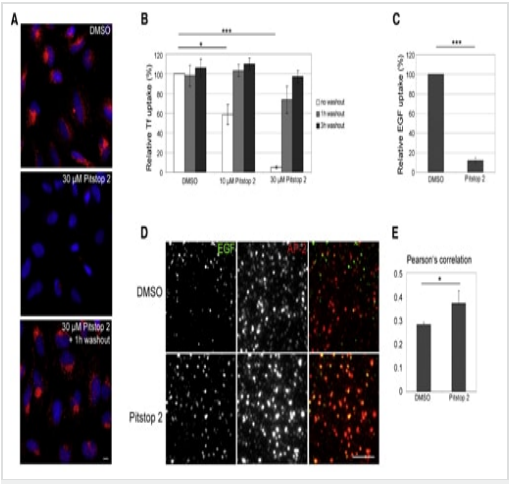


Functional Studies - Pitstop® 2, Novel cell-permeable clathrin inhibitor (ab120687)

Dutta D et al. PLoS One. 2012; 7(9): e45799. doi: 10.1371/journal.pone.0045799 Reproduced under the Creative Commons license https://creativecommons.org/publicdomain/zero/1.0/

Hela cells were preincubated with DMSO (0.1%) or different doses of pitstop 2 (ab120687) ranging from 5 μM to 30 μM. Cells were then allowed to internalize Alexa594-Transferrin and antibodies to MHCI in the presence or absence of the drug for 30 min. After internalization, surface antibody was removed by low pH acid wash. Cells were then labeled with secondary antibodies to detect trasnferrin and MHCI.

Credit: Dutta D et al. PLoS One. 2012; 7(9): e45799. doi: 10.1371/journal.pone.0045799



Functional Studies - Pitstop® 2, Novel cell-permeable clathrin inhibitor (ab120687)

Von Kleist L et al., Cell. 2011 Aug 5;146(3):471-84. Fig, 3(A-E)., doi: 10.1016/j.cell.2011.06.025.

A) Pitstop® 2 reversibly inhibits Tf uptake. After 15 min preincubation HeLa cells were incubated with Alexa Fluor® 568-Tf in the presence of DMSO or 30 μM Pitstop 2 for 15 min. Tf uptake is seen to resume after washout of the drug for 1 hr. Scale bar, 10 mm. B) Reversibility and dose dependence of Pitstop® 2-mediated inhibition of Tf uptake. Data represent SEM (n = 3 independent experiments; *p < 0.05, ***p < 0.0001). C) Pitstop® 2 inhibits EGF uptake. HeLa cells pretreated with 30 μM pitstop 2 or DMSO for 15 min were incubated for 15 min with Alexa Fluor® 488-EGF in the continued presence of inhibitor. Data represent SEM (n = 3 independent experiments; ***p < 0.0001). D) Pitstop 2 does not interfere with AP-2-mediated cargo sequestration into CCPs. TIRF microscopy images of Cos7 cells pretreated with DMSO or 30 μM Pitstop 2 for 15 min were incubated with Alexa Fluor® 488-EGF at 8oC in the continued presence of inhibitor and immunostained for AP-2a (red). Scale bar, 4 mm. E) Pearson's

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