Product Data Sheet

Product Name: SCH 51344
Cat. No.: GC17613

Chemical Properties

Cas. No.	171927-40-5		
Chemical Name			
SMILES	CC1=NN=C(N2)C1=C(NCCOCCO)C3=C2C=CC(OC)=C3		
Formula	$C_{16}H_{20}N_4O_3$	M.Wt	316.35
Solubility	≥ 31.6mg/mL in DMSO	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	SCH 51344		

Background

Kd: 49 nM

SCH 51344 is a potent MTH1 inhibitor.

MTH1, also known as NUDT1, is a nucleotide pool sanitizing enzyme. Loss-of-function of MTH1 impaired growth of KRAS tumour cells. RAS possessed interaction with multiple targets in the cell and regulates at least two signaling pathways, one controlling extracellular signal-regulated kinase (ERK) activation and the other regulating membrane ruffling formation. These two pathways could synergistically cause transformation.

In vitro: SCH 51344 inhibits Ras-accelerated malignant transformation and increases α-actin promoter-stimulated CAT activity in Ras-transformed cells. SCH 51344 has quite little effect on Ras-induced ERK and JNK activation. SCH 51344 inhibits Ras-accelerated membrane ruffling in REF-52 fibroblasts and abolishes anchorage-independent growth of

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Ras-mediated tumor cell lines. SCH 51344 also induces DNA damage in SW480 colon cancer cells [1,2].

SCH 51344 specifically inhibits membrane ruffling stimulated by activated forms of H-RAS, K-RAS, N-RAS, and RAC. Fibroblast cells treated with this compound had very little effect on activation of ERK and JUN kinase activities mediated by RAS. SCH 51344 was an effective inhibitor of the anchorage-independent growth of Rat-2 fibroblast cells (transformed by the three forms of oncogenic RAS and RAC V12). These facts suggest that a critical component inhibited by SCH 51344 existed in the membrane ruffling pathway downstream from RAC and indicated that this may be an effective approach targeting this pathway to inhibiting transformation by RAS and other oncogenes [1,2].

In vivo: So far, no study in vivo has been conducted.

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

References:
[1] Walsh AB, Dhanasekaran M, Bar-Sagi D, Kumar CC. SCH 51344-induced reversal of RAS-transformation is accompanied by the specific inhibition of the RAS and RAC-dependent cell morphology pathway. Oncogene. 1997 Nov 20;15(21):2553-60.
[2]. Kumar CC, Ohashi K, Nagata K, Walsh A, Bar-Sagi D, Mizuno K. SCH 51344, an inhibitor of RAS/RAC-mediated cell morphology pathway. Ann N Y Acad Sci. 1999; 886: 122-31.

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