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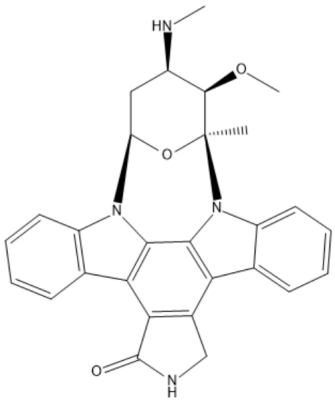
Certificate of Analysis

Catalog Number	BP22566
Product Name	Staurosporine

Physical and Chemical Properties

Synonyms	Antibiotic AM-2282; STS; AM-2282
CAS No.	62996-74-1
Chemical Formula	C28H26N4O3
Molecular Weight	466.53
Solubility	DMSO: 62.5 mg/mL (133.97 mM, Need ultrasonic)
Storage	Powder: -20°C for 2 years In solvent: -80°C for 1 year
Chemical Structure OR Tested Image	

Product Information

Description	Staurosporine is a potent, ATP-competitive and non-selective inhibitor of protein kinases with IC50s of 6 nM, 15 nM, 2 nM, and 3 nM for PKC, PKA, c-Fgr, and Phosphorylase kinase respectively. Staurosporine also inhibits TAOK2 with an IC50 of 3 μM. Staurosporine is an apoptosis inducer.
Targets&IC50	PKC: 6 nM (IC50); PKA: 15 nM (IC50); c-Fgr: 2 nM (IC50); Phosphorylase kinase: 3 nM (IC50); S6 kinase (70 kDa); 5 nM (IC50); v-Src: 6 nM (IC50); cdc2: 9 nM (IC50); TPK-IIB/Syk: 16 nM (IC50); Ca2+/CaM PK-I1 : 20 nM (IC50); MLCK: 21 nM (IC50); IR: 61 nM (IC50); EGF-R: 100 nM (IC50); ERK-1: 1500 nM (IC50); CSK: 2000 nM (IC50); IGF-IR: 6150 nM (IC50); CK2: 19500 nM (IC50); CK1: 163500 nM (IC50);
In vitro	Staurosporine, widely used as a protein kinase C (PKC) inhibitor with a broad spectrum of activity, is an alkaloid isolated from the culture broth of Streptomyces staurospores. MC3T3E-1 osteoblasts, expose to Staurosporine (100 nM) for 12 h, release an amount of LDH (12.4±3.1%) that is similar to that release by the control cells(10.0±2.4%), indicating the relative absence of lytic death, which occurs in necrosis. In addition, treatment with Staurosporine (100 nM) results in morphological changes, characteristic of apoptosis: a brightblue fluorescent condensed nuclei seen through a fluorescence microscope after Hoechst 33258-staining, and a reduction of cell volume.
In vivo	The inhibitory effect of Staurosporine is statistically significant at around Wk 10 of tumor promotion. Although statistically significant inhibition is not obtained with 10 ng of Staurosporine in later weeks of the experiment, a decreasing tendency in the percentages of tumor bearing mice and in average numbers of tumors per mouse is apparent. Thus, Staurosporine slightly inhibits tumor promotion of Teleocidin, even at the dose at which Staurosporine itself induced tumors. Staurosponne (0.05 and 0.1 mg/kg intraperitoneal) attenuates the impaired perlormance of water maze and passive avoidance tasks, even though the drug administration began 2 weeks after the lesion. Moreover, Staurosporine (0.1 mg/kg) partially reversed the decrease of choline acetyltransferase activity in the fronto-parietal cortex induced by basal forebrain-lesion. These results suggest that Staurosporine attenuates impairment of learning through reversal of damage to cholinergic neurons induced by basal forebrain-lesion.

Analytical Data

HPLC	Shows Min >99% purity
H-NMR	Consistent with structure
Stability and Solubility Advice	Information on product stability, especially in solution, has rarely been reported and in most cases we can only provide a general guideline. We recommend that once the stock solution has been prepared, it be stored in equal quantities in sealed vials and used within 1 month. Avoid repeated freezing and thawing cycles. Storage conditions for some special products should be referred to their storage details.

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