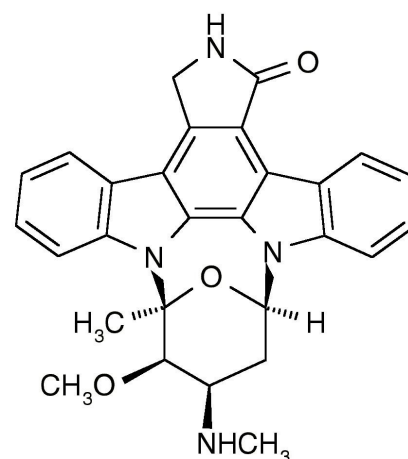


## Staurosporine

Potent and cell-permeable inhibitor of a wide variety of protein kinases

### Product Description

<b>Name :</b>	<b>Staurosporine</b>
	Synonyms: antibiotic AM-2282, Staurosporine from <i>Streptomyces staurosporeus</i>
<b>Catalog Number :</b>	FP-74146E 1 mg
<b>Structure :</b>	C <sub>28</sub> H <sub>26</sub> N <sub>4</sub> O <sub>3</sub> CAS [62996-74-1]
<b>Molecular Weight :</b>	MW= 466.53
<b>Melting point:</b>	270°C
<b>Purity:</b>	>99%
<b>Solubility:</b>	Soluble in DMSO at 100 mg/mL; soluble in ethanol at 2.5 mg/mL with warming; very poorly soluble in water; maximum solubility in plain water is estimated to be about 10-20 µM; buffers, serum, or other additives may increase or decrease the aqueous solubility.



**Storage:** below -20 °C (M)

### Technical information

- Biological activity

The staurosporine, isolated from *Streptomyces staurosporeus* is one of the most potent and widely used inhibitors of protein kinases. It is a potent inhibitor of protein kinase C (IC<sub>50</sub> = 0.7 nM), but also protein kinase A (IC<sub>50</sub> = 7-15 nM), and protein kinase G (IC<sub>50</sub> = 8.5 nM).

Other sources indicate for Protein Kinase C (IC<sub>50</sub> = 5 nM), PKA (IC<sub>50</sub> = 15 nM), PKG (18 nM), CaMKII (20 nM), S6K (5 nM), MLCK (21 nM), SRC (6 nM), FGR (2 nM), LYN (20 nM) and SYK (16 nM).

In contrast it has a relatively low potency for ERK1 (1.5 µM), CSK (2 µM), IGF-IR (6.2 µM), CK2 (19.5 µM) and CK1 (>100µM).

It is cell permeable .

FT-74146E

Staurosporine induces apoptosis in human neuroblastoma cell lines and chick embryonic neurons<sup>f</sup>.

- Typical specifications:

FORM:	Powder to crystalline solid or solid film at bottom of vial		
COLOR:	White to off-white to light yellow		
PURITY by HPLC:	>99%		
PURITY by TLC:	>99%		
ELEMENTAL ANALYSIS:	Element	Calculated	Found
(C <sub>28</sub> H <sub>26</sub> N <sub>4</sub> O <sub>3</sub> • 1.0 C <sub>4</sub> H <sub>8</sub> )	C	71.35%	71.29%
	H	6.36%	6.29%
	N	10.40%	10.37%

## Guidelines for use

- Protocols

Protocol may be found in the literature.

- Handling:

Toxic. May be carcinogenic. Wear gloves and mask when handling product. Protect from light.

## References

- Bijur GN, De Sarno P, Jope RS (2000) "Glycogen synthase kinase-3beta facilitates staurosporine- and heat shock-induced apoptosis. Protection by lithium" *J. Biol. Chem.* 275(11):7583-90.
- Boix, J., et al. "Characterization of the cell death process induced by staurosporine in human neuroblastoma cell lines." *Neuropharmacology* 36: 811-821 (1997). Wiesner, D.A. and Dawson, G., "Staurosporine induces programmed cell death in embryonic neurons and activation of the ceramide pathway." *J. Neurochem.* 66: 1418-1425 (1996).
- Matsumoto, H. and Sasaki, Y. "Staurosporine, a protein kinase C inhibitor, interferes with proliferation of arterial smooth muscle cells." *Biochem. Biophys. Res. Commun.* 158: 105-109 (1989).
- Meggio F, Donella Deana A, Ruzzene M et al. (1995) "Different susceptibility of protein kinases to staurosporine inhibition. Kinetic studies and molecular bases for the resistance of protein kinase CK2" *Eur J Biochem.* 234(1):317-22
- Nakano H, Kobayashi E, Takahashi I, Tamaoki T, Kuzuu Y, Iba H (1987) "Staurosporine inhibits tyrosine-specific protein kinase activity of Rous sarcoma virus transforming protein p60" *J. Antibiot. (Tokyo)* 40(5):706-8
- Tamaoki T, Nomoto H, Takahashi I, Kato Y, Morimoto M, Tomita F (1986) "Staurosporine, a potent inhibitor of phospholipid/Ca<sup>++</sup>-dependent protein kinase" *Biochem. Biophys. Res. Commun.* 135(2):397-402
- Yamaki K, Ohuchi K (1999) "Participation of protein kinases in staurosporine-induced interleukin-6 production by rat peritoneal macrophages" *Br J Pharmacol.* 127(6):1309-16.
- Yamaki K, Hong J, Hiraizumi K, Ahn JW, Zee O, Ohuchi K (2002) "Participation of various kinases in staurosporine induced apoptosis of RAW 264.7 cells" *J. Pharm. Pharmacol.* 54(11):1535-44

## Related products

- Protease inhibitors, [WT0900](#)
- Kinases substrates
- Live/Dead Mammalian Viability/Cytotoxicity Assay Kit, [BF4710](#)
- Caspase 8 Assay, [BG4512](#)

## Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

**Disclaimer** : Materials from FluoProbes® are sold **for research use only**, and are not intended for food, drug, household, or cosmetic use. EFluoProbes® is not liable for any damage resulting from handling or contact with this product. N07E

LIFE SCIENCES



**interchim**

211 bis, avenue JF Kennedy  
BP 1140 - 03100 Montluçon  
Fax +33 4 70 03 82 60

Hotline +33 4 70 03 73 06 • [interbiotech@interchim.com](mailto:interbiotech@interchim.com)