

Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@m2stage.hellobio.com



DATASHEET

Calyculin A

Product overview

Name	Calyculin A
Cat No	HB0161
Alternative names	CA
Biological action	Inhibitor
Purity	>98%
Description	Potent, selective protein phosphatase 1 / 2A inhibitor

Biological Data

Biological description	Potent and selective protein phosphatase 1 and 2A catalytic subunit inhibitor (IC ₅₀ values are 2 and 0.5 - 1 nM respectively). Inhibits smooth muscle myosin B phosphatase catalytic subunit (IC ₅₀ = 0.7 nM). Thought to act as a calcium channel blocker, blocks intracellular calcium increase and prevents cell cycle progression. Shows Alzheimer's disease-like actions; causes tau protein hyperphosphorylation and impairs spatial memory retention.
------------------------	---

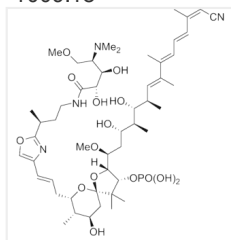
Solubility & Handling

Storage instructions	-20 °C (desiccate)
Solubility overview	Soluble in DMSO (50mM)
Shipping conditions	The stability of this product allows for safe shipment at ambient temperature. Please follow the recommended storage conditions upon receipt.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	N-[(3S)-[4-(1E)-3-[(2R,3R,4R,7S,8S, 9R)-2-[(1S,3S,4S,5R,7E,9E,11E,13Z)-14-Cyano-3,5-di hydroxy-1-methoxy-4,6,8,9,13-pentamethyl-7,9,11,13-tetradecatetraenyl]-9-hydroxy-4,4,8-trimethyl-3-(phosphonoxy)-1,6-dioxaspiro[4.5]dec-7-yl]-1-propenyl]-2-oxazolyl]butyl]-4-deoxy-4-(dimethylamino)-5-O-methyl-L-ribonamide
Molecular Weight	1009.18

Chemical structure



Molecular Formula	C ₅₀ H ₈₁ N ₄ O ₁₅ P
CAS Number	101932-71-2
PubChem identifier	5311365
SMILES	<chem>C[C@H]1[C@@H](C[C@@]2(C([C@H]([C@H](O2)[C@H](C[C@@H]([C@H](C)[C@@H]([C@H](C)/C=C(\C)/C(=C/C=C/C(=C\C#N)/C)/C)O)OC)OP(=O)(O)O)(C)O[C@H]1C/C=C/C3=COC(=N3)[C@@H](C)CCNC(=O)[C@H]([C@H]([C@H](COC)N(C)C)O)O</chem>
InChi	InChI=1S/C50H81N4O15P/c1-29(20-22-51)16-14-17-30(2)32(4)24-33(5)42(57)35(7)38(55)25-41(65

Chemical name	<i>N</i> -[(3 <i>S</i>)-4-(1 <i>E</i>)-3-[(2 <i>R</i> ,3 <i>R</i> ,4 <i>R</i> ,7 <i>S</i> ,8 <i>S</i> , 9 <i>R</i>)-2-[(1 <i>S</i> ,3 <i>S</i> ,4 <i>S</i> ,5 <i>R</i> ,7 <i>E</i> ,9 <i>E</i> ,11 <i>E</i> ,13 <i>Z</i>)-14-Cyano-3,5-di hydroxy-1-methoxy-4,6,8,9,13-pentamethyl-7,9,11,13-tetradecatetraenyl]-9-hydroxy-4,4,8-trimethyl-3-(phosphonoxy)-1,6-dioxaspiro[4.5]dec-7-yl]-1-propenyl]-2-oxazoly]butyl]-4-deoxy-4-(dimethylamino)-5- <i>O</i> -methyl-L-ribonamide-13)45-46(69-70(61,62)63)49(8,9)50(68-45)26-39(56)34(6)40(67-50)19-15-18-36-27-66-48(53-36)31(3)21-23-52-47(60)44(59)43(58)37(28-64-12)54(10)11/h14-18,20,24,27,31,33-FKAWLXNLHHIHLA-YCBIHMBMSA-N
InChiKey	MFCD06795864
MDL number	

References

Calyculin A and okadaic acid: inhibitors of protein phosphatase activity.

Ishihara H *et al* (1989) Biochem Biophys Res Commun 159(3)

PubMedID [2539153](#)

Calyculin A from Discodermia calyx is a dual action toxin that blocks calcium influx and inhibits protein Ser/Thr phosphatases.

Holy M *et al* (2012) Toxins (Basel) 4(10)

PubMedID [23162706](#)

Melatonin ameliorates Alzheimer-like pathological changes and spatial memory retention impairment induced by calyculin A.

Yang X *et al* (2011) J Psychopharmacol 25(8)

PubMedID [20542922](#)