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## DATASHEET

Calyculin A

### Product overview

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

### Biological Data

<b>Biological description</b>	Potent and selective protein phosphatase 1 and 2A catalytic subunit inhibitor (IC <sub>50</sub> values are 2 and 0.5 - 1 nM respectively). Inhibits smooth muscle myosin B phosphatase catalytic subunit (IC <sub>50</sub> = 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 spacial memory retention.
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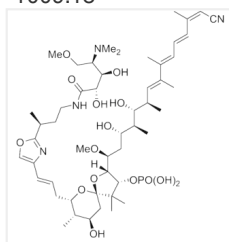
### Solubility & Handling

<b>Storage instructions</b>	-20 °C (desiccate)
<b>Solubility overview</b>	Soluble in DMSO (50mM)
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

### Chemical Data

<b>Chemical name</b>	<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-oxazolyl]butyl]-4-deoxy-4-(dimethylamino)-5- <i>O</i> -methyl-L-ribonamide 1009.18
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**Molecular Weight**  
**Chemical structure**



<b>Molecular Formula</b>	C <sub>50</sub> H <sub>81</sub> N <sub>4</sub> O <sub>15</sub> P
<b>CAS Number</b>	101932-71-2
<b>PubChem identifier</b>	5311365
<b>SMILES</b>	<chem>C[C@H]1[C@@H](C[C@@]2C([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>
<b>InChi</b>	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(65-13)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-

InChIKey  
MDL number

FKAWLXNLHHIHLA-YCBIHMBMSA-N  
MFCD06795864

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## 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](#)

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