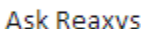



❖ Ask Reaxys

I am interested in starting a project on compounds isolated from marine natural products that have anticancer properties.

❖ Citations

anticancer activity of marine natural products

Go

Type the phrase anticancer activity of marine natural products into the search box and click Go.

Reaxys identifies this phrase as a citation query and automatically retrieves a list of Citations.

One of those citations is for a recent review article on Bryostatins, compounds isolated from aquatic invertebrate animals called Bryozoa.

Title of the Document	Authors	Year	Source
Marine natural products: Bryostatins in preclinical and clinical studies	Kollar, Peter; Balounova, Zuzana; Rajchard, Josef; Pazourek, Jiri	2014	Pharmaceutical Biology, 2014 vol. 52, # 2 p. 237 - 242 Full Text
<p>🚩 Title/Abstract</p> <p>Marine natural products: Bryostatins in preclinical and clinical studies</p> <p>Context: Bryostatins represent an important group of pharmaceutically promising substances. These compounds are isolated from marine invertebrates, mainly in bryozoans. The most frequently investigated substance is bryostatin-1.</p> <p>Objective: The aim of this work was to summarize documented preclinical and clinical effects of bryostatins.</p> <p>Web of Science databases in 2012. Results and conclusion: Our review showed that bryostatins are potent antineoplastic agents. Their anticancer activity against several tumor types has also been established and described.</p> <p>Bryostatin's anticancer activity has been proved against various cancer types.</p> <p>Moreover, significant results have been achieved by using bryostatin-1 in combination with other therapeutic agents. The properties that bryostatins possess, their ability to sensitize some resistant cells to chemotherapy agents, their cytotoxic effects, and enhancing effect on long-term memory are worth mentioning. In particular, some new treatment of cancer and other diseases in future.</p>			

In particular, a lactone called Bryostatin-1 is mentioned as being well-studied with promising anticancer properties.

❖ Substances

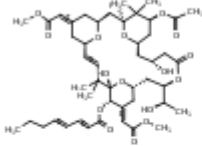



Does Reaxys have any information on *Bryostatin-1*?

Ask Reaxys 	<input type="text" value="bryostatin-1"/>	<input type="button" value="Go"/>
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Type **bryostatin-1** into the search box and click **Go**.

Reaxys identifies this as a substance name and automatically retrieves a list of Substances.

There is a lot of data for Bryostatin-1.

Structure	Structure/Compound Data
    Synthesize Hide Details	<p>Chemical Name: [3H]-Bryostatin 1</p> <p>Reaxys Registry Number: 8184162 CAS Registry Number: 83314-01-6 Type of Substance: heterocyclic Molecular Formula: C₄₇H₆₈O₁₇ Linear Structure Formula: C₄₇H₆₈O Molecular Weight: 905.047 InChI Key: MJQUEDHRCUIRLF-TVIXEN</p>
<p>Chemical Names and Synonyms</p> <p>[3H]-Bryostatin 1, Bryostatin 1, Bry, bryostatin 1, bryostatin-1, bryostatine-1, NSC-339555</p> <p>Bioactivity</p> <ul style="list-style-type: none"> ↕ In vitro: Efficacy (36) ↕ Toxicity/Safety Pharmacology (81) <p>Identification</p> <p>Physical Data</p> <ul style="list-style-type: none"> ↕ Melting Point (1) ↕ Crystal Property Description (1) ↕ Optical Rotatory Power (2) ↕ Spectra 	

The available data includes physical data (mp, optical Rotatory Power, NMR, etc.).

Type	Concentration	Length of Path	Solvent	Optical Rotatory Power	Wavelength	Temperature
[alpha]	0.2 g/100ml	10 cm	chloroform	11 deg	589 nm	20 °C


Melting Point	Description	Nucleus	Solvents	Frequency
230 - 235 °C	Chemical shifts Spectrum	¹ H	chloroform-d ₁	500 MHz

It also includes a large collection of bioactivity data.

Quantitative Results											
Parameter	Value (qual)	Value (quant)	Unit	Target	Target subunit	Species	Tissue/organ	Cell	Bioassay	Dose	Reference (e)
% Stimulation	#	120		PKCd				COS-7	Enzymology stimulation	1 µM	Journal of the Title/Abstract
Ki		1.32	nM	PKC		Rat	Brain		Binding	0.180000 nM	Journal of the Title/Abstract
Ki		0.44	nM	PKCd				SF-9	Binding	0.100000 µM	Journal of Med Title/Abstract
% Inhibition	NA			CDK4/Cyclin	Cyclin D1			SF-9	Enzymology inhibition	100 µM	Patent: WO1 Title/Abstract
Kd		1.7	nM	PKCa				SF-9	Binding	0.500000 nM	Molecular Phar Title/Abstract
Kd		5.6	nM	PKCb I				SF-9	Binding	0.500000 nM	Molecular Phar Title/Abstract

❖ Reactions

Does Reaxys have any information on the synthesis of Bryostatin-1?

Ask Reaxys 

Go

Type preparation of bryostatin-1 into the search box and click Go.

Reaxys identifies this as a reaction query and retrieves a list of preparations.

