

❖ Ask Reaxys

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

❖ Citations

Ask Reaxys 

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 Marine natural products: Bryostatins in preclinical and clinical studies 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. Objective: The aim of this work was to summarize documented preclinical and clinical effects of bryostatins. Results and conclusion: Our review showed that bryostatins are promising antineoplastic activity against several tumor types has also been established and described. Bryostatin's anticancer activity has been proved against various cancer types. Moreover, significant results have been achieved by using bryostatin-1 in combination with other therapies. 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

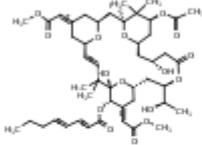
Does Reaxys have any information on *Bryostatin-1*?

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 	<input type="text" value="preparation of bryostatin-1"/>	<input type="button" value="Go"/>
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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.

