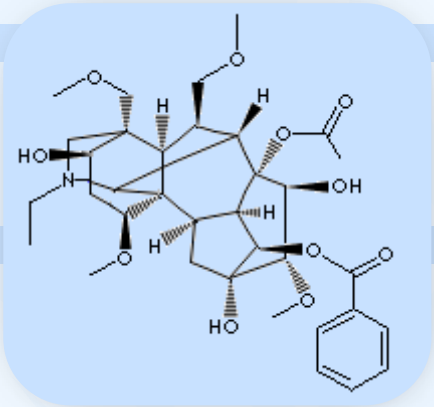
ACONITINE

SYNONYMS

Aconitin; Aconitin cristallisat; Aconitin cristallisat; Aconitinum; Aconitysat; Akonitin; (1alpha,3alpha,5xi,6alpha,9xi,10xi,14alpha,15alpha,16beta)-8-(Acetyloxy)-20-ethyl-3,13,15-trihydroxy-1,6,16-trimethoxy-4-(methoxymethyl)aconitan-14-yl benzoate; 20-Ethyl-3alpha,13,15alpha-trihydroxy-1alpha,6alpha,16beta-trimethoxy-4-(methoxymethyl)aconitane-8,14alpha-diyl 8-acetate 14-benzoate;



PRODUCT IDENTIFICATION

CAS RN	302-27-2
EINECS RN	206-121-7
FORMULA	$C_{34}H_{47}NO_{11}$
MOL WEIGHT	645.737

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white to off-white powder
MELTING POINT	200 C
BOILING POINT	
DENSITY	
SOLUBILITY IN WATER	Insoluble (Soluble in ethanol)
pH	
VAPOR DENSITY	
REFRACTIVE INDEX	
FLASH POINT	

GENERAL DESCRIPTION

Neurotoxin. Activates tetrodotoxin-sensitive Na+ channels, inducing presynaptic depolarization, thus blocking the nerve action potential which, in turn, blocks the release of neurotransmitters and decreases the end plate potential at the neuromuscular junction. Aconitine also blocks norepinephrine reuptake. In the heart, aconitine induces ventricular tachycardia after intracoronary injection. In cultured ventricular myocytes, aconitine increases the duration of the action potential and induces the appearance of early after depolarization. (source: http://www.sigmaaldrich.com/)

Aconitine, an alkaloid obtained from the plant Aconitum napellus is recognized for its phytomedical effects on the heart, central nervous system, and skeletal muscle (Catterall, Honerjager and Meissner, Ameri). The arrhythmogenic effects of aconitine include the induction of premature ventricular contractions (PVC), ventricular tachycardia (VT), torsades de pointes, ventricular fibrillation (VF), and mortality in a dose-dependent manner (Lu and Clerck). Experimentally, aconitine-induced arrhythmias are thought to be induced by triggered activity due to delayed afterdepolarization and early afterdepolarization. At the molecular level, aconitine binds to Na+ channels and prolongs their open state favoring entry of a large quantity of Na+ into cytosol, which may be accompanied by Ca2+ overload via an electrogenic Na+-Ca2+ exchange (NCX) system and eventually induces triggered activity (Sawanobori et al., Watano et al.). Thus, the role of NCX is suspected to be important to generate triggered activity in the heart (Adaniya et al.,Sawanobori et al.). (source: http://jpet.aspetjournals.org/)

A neurotoxin is a substance which is toxic to nerve tissue. Neurolysin is a synonym for neurotoxin. The toxicity of neurotoxins is normally accomplished by interaction with membrane proteins. Neurotoxins frequently work by affecting ion channels, such as calcium channels, potassium channels and sodium channels. Common examples of neurotoxins include venom (snakes, bees, frogs, scorpions, spiders, pufferfish, etc.), environmental substances (carbon monoxide, ethanol, mercury, etc.) and in-body -- or "endogenous" -- substances (glutamate, etc.). (source: http://www.omdict.com/)

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Neurotoxins

Product	CAS RN.
(-)-Epibatidine	152378-30-8
11-Deoxy-11-oxotetrodotoxin	73600-89-2
11-Deoxytetrodotoxin	113564-23-1
11-Nortetrodotoxin	70170-72-8
11-Oxotetrodotoxin	123665-88-3
1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine	28289-54-5
2-Depentylperhydrohistrionicotoxin	55228-77-8
3-Acetylpyridine	350-03-8
4-Epitetrodotoxin	98242-82-1
4-Ethoxytetrodotoxin	7724-40-5
4-Methoxytetrodotoxin	7724-39-2
6-Epitetrodotoxin	112318-40-8
7,8-Dihydrobatrachotoxin A	38930-41-5
Acetonylacetone	110-13-4
Acetylcinobufagin	4026-97-5
Aconitine	302-27-2
Agitoxin 1	155646-21-2
Agitoxin 2	155646-22-3
Agitoxin 3	155646-23-4
Allopumiliotoxin 267A	
alpha-Bungarotoxin	11032-79-4
Anhydrotetrodotoxin	13072-89-4
Arenobufagin	464-74-4
Areno-bufotoxin	59969-42-5
Batrachotoxin	23509-16-2
Batrachotoxinin A	19457-37-5
Batrachotoxinin A 20-(2,5-dimethylpyrrole-3-carboxylate)	23756-88-9
Batrachotoxinin A 20-(p-bromobenzoate)	19457-36-4
Batrachotoxinin A 20-alpha-(2,4,5-trimethyl-1H-pyrrole-3-carboxylate)	23509-21-9
Batrachotoxinin A 20-alpha-(2,4-dimethyl-5-acetyl-1H-pyrrole-3-carboxylate)	23509-23-1
Batrachotoxinin A 20-alpha-(2,4-dimethyl-5-ethyl-1H-pyrrole-3-carboxylate)	23509-22-0
Batrachotoxinin A 20-alpha-(4,5-dimethyl-1H-pyrrole-3-carboxylate)	32476-55-4
Batrachotoxinin A 20-alpha-benzoate	78870-19-6
Batrachotoxinin-A N-methylanthranilate	97779-14-1
beta1-Bungarotoxin	65862-89-7
beta2-Bungarotoxin	82446-04-6
beta3-Bungarotoxin	82446-05-7
beta4-Bungarotoxin	82446-06-8
beta5-Bungarotoxin	82446-07-9
beta-Bungarotoxin	12778-32-4
Botulinum toxin type B	93384-44-2
Botulinum toxins	
Bufotalin	471-95-4
Bufotoxin	464-81-3

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Bungarotoxin	37209-28-2
C11-Nortetrodotoxin	81520-41-4
Calcicludine	
Calciseptine	134710-25-1
Charybdotoxin	95751-30-7
Charybdotoxin	115422-61-2
Ciguatoxin	11050-21-8
Ciguatoxin 3	139341-09-6
Ciguatoxin 3C	148471-85-6
Ciguatoxin 4B	123676-76-6
Ciguatoxin 4C	136252-00-1
Ciguatoxin-2	142185-85-1
Cinobufagin	470-37-1
Cino-bufotoxin	60113-07-7
Cycasin	14901-08-7
Decahydrohistrionicotoxin	74674-96-7
Deoxytetrodotoxin	7724-41-6
Desacetylcinobufagin	4026-95-3
Diacetylanhydrotetrodotoxin	13285-84-2
Diiodo-alpha-bungarotoxin	60616-86-6
Domoic acid	14277-97-5
Epibatidine	140111-52-0
gamma-Bufotoxin	53915-36-9
gamma-Bungarotoxin	58318-18-6
Gephyrotoxin	55893-12-4
Harman	486-84-0
Hefutoxin	
Histrionicotoxin	34272-51-0
Homobatrachotoxin	23509-17-3
Iodo-alpha-bungarotoxin	77097-81-5
Isospaglumic acid	3106-85-2
Kokoi venom	
Leiurotoxin I	116235-63-3
Margatoxin	145808-47-5
Marinobufagenin	470-42-8
Marino-bufotoxin	30685-91-7
Maurotoxin	
Methylazoxymethanol acetate	592-62-1
N,N'-Ethylenediamineditetrodotoxin	91260-89-8
Neodihydrohistrionicotoxin	55475-52-0
Neuronal bungarotoxin	79633-24-2
Norchloroepibatidine	155322-26-2
Norharman	244-63-3
Octahydrohistrionicotoxin	55475-50-8
omega-Agatoxin IVA	145017-83-0
omega-Conotoxin G VIA	92078-76-7
Onaclostox	93384-43-1

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Pardaxin	67995-63-5
Perhydrohistrionicotoxin	40709-29-3
Pumiliotoxin A	67054-00-6
Pumiliotoxin B	67016-65-3
Pumiliotoxin C	27766-71-8
Saxitoxin dihydrochloride	35554-08-6
Saxitoxin	35523-89-8
Scaritoxin	66231-73-0
Slotoxin	
Taicatoxin	112154-17-3
Tarichatoxin	4368-28-9
Telocinobufagin	472-26-4
Tetrodaminotoxin	7724-38-1
Tetrodotoxin	4368-28-9
Tetrodotoxin citrate	18660-81-6
Tryptoline	16502-01-5

STABILITY AND REACTIVITY

STABILITY	Stable under normal conditions.
INCOMPATIBLE MATERIALS	Strong oxidizing agents, Strong bases.
DECOMPOSITION PRODUCTS	Carbon monoxide, Carbon dioxide, Nitrogen oxides
POLYMERIZATION	

SAFETY

HAZARD NOTES	Very toxic by inhalation, in contact with skin and if swallowed. Readily absorbed through skin. Target organ(s): Nerves. Heart. Avoid contact with skin. In case of accident or if you feel unwell, seek medical advice immediately
EYE	Cause eye irritation.
SKIN	Cause skin irritation. May be fatal if absorbed through skin. Readily absorbed through skin.
INGESTION	May be fatal if swallowed.
INHALATION	Material may be irritating to mucous membranes and upper respiratory tract. May be fatal if inhaled.
CHRONIC	
NFPA RATING	Health: 4, flammability: 0, reactivity: 0

SALES SPECIFICATION

APPEARANCE	white to off-white crystalline powder
ASSAY	98.0% min
OPTICAL ROTATION	+20° ~ +25°

TRANSPORT & REGULATORY INFORMATION

UN NO.	1544
HAZARD CLASS	6.1
PACKING GROUP	I
HAZARD SYMBOL	T+
RISK PHRASES	26/28

ACONITINE

SAFETY PHRASES 24-45

PACKING

PRICE