

## Valinomycin

K<sup>+</sup> ionophore antibiotic

**Catalog # V113-908**

Lot # N3365-15

CAS# 2001-95-8

### Product Description

Molecular Formula: C<sub>54</sub>H<sub>90</sub>N<sub>6</sub>O<sub>18</sub>

Appearance: White powder

Molecular Weight: 1111.3

Purity: >98% (HPLC); NMR (conforms)

Solubility: May be dissolved DMSO (25 mg/ml); or ethanol (25 mg/ml)

### Alternative name(s)

Cyclo(D- $\alpha$ -hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D- $\alpha$ -hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D- $\alpha$ -hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl)

### Storage and Stability

Store desiccated as supplied at -20°C for up to 2 years.

Store solutions at -20°C for up to 2 months.

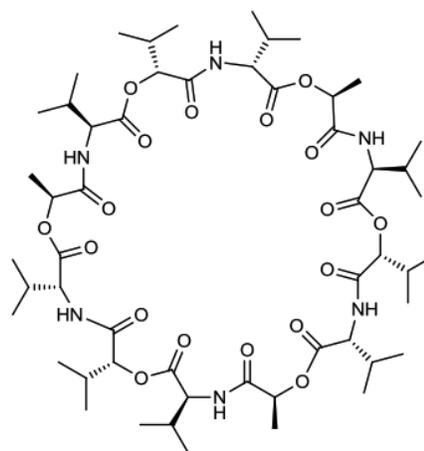
### Scientific Background

Selective K<sup>+</sup> ionophore. Induces the release of cytochrome c from mitochondria without inducing permeability transition (1). Induces mitochondrial swelling at concentrations as low as 1 nM (2). Induce K<sup>+</sup> flow across natural and synthetic lipid vesicles (3).

### References

1. A Yamada et al. Mol. Cell. Proteomics. 2009 8:1265
2. DD Lofrumento et al. Apoptosis. 2011 16:1004
3. WF Paxton et al. Colloids Surf. B. Biointerfaces 2017 159:268

### Molecular Structure



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Format White powder

Solubility May be dissolved DMSO (25 mg/ml); or ethanol (25 mg/ml)

Storage & Shipping Store desiccated as supplied at -20°C for up to 2 years. Store solutions at -20°C for up to 2 months. Product shipped at ambient temperature.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

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# SAFETY DATA SHEET

## Article 1 – Identification of the Substance

**Product Name: Valinomycin**

**Catalog # V113-908**

*This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.*

Manufacturer's Name: SignalChem Biotech Inc.  
 Street Address: 110-13120 Vanier Place  
 City, Prov. Postal Code: Richmond, BC, V6V 2J2  
 Fax: 604-232-4601  
 EMERGENCY PHONE: 604-232-4600

## Article 2 - Hazardous Identification

### 2.1 Classification of Substance (GHS)

Acute Toxicity: Oral, Category 2

Acute Toxicity: Skin, Category 2

### 2.2 Label Elements

Classification according to Regulation (EC) No 1272/2008



**GHS Signal Word: DANGER**

#### GHS Hazard Phrases:

H300	Fatal if swallowed.
H310	Fatal in contact with skin.

#### GHS Precaution Phrases:

P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### GHS Response Phrases:

P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P321	Specific treatment.
P330	Rinse mouth.
P361+364	Take off immediately all contaminated clothing and wash it before reuse.

#### GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal Information

**2.3 Other hazards:** Fatal if swallowed or in contact with skin. Material may be irritating to mucus membranes and upper respiratory tract. May be harmful by inhalation. May cause eye, skin or respiratory system irritation.

## Article 3 – Composition/Information on Ingredients

### 3.1 Substance

**Product Name(s):** Valinomycin  
**Chemical Name:** Cyclo(D-a-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D-a-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D-a-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl)  
**Molecular Formula:** C<sub>54</sub>H<sub>90</sub>N<sub>6</sub>O<sub>18</sub>  
**CAS Number:** 2001-95-8  
**Concentration:** 100%

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# SAFETY DATA SHEET

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## Article 4 – First Aid

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### 4.1 Description of First Aid Measures

**General:** Move out of dangerous area and contact a doctor. Provide them with this data sheet.

**If Inhaled:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**In Case of Eye Contact:** Hold eyelids apart and immediately flush eye(s) with copious amounts of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

**In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**4.2 Important Symptoms and Effects:** May cause convulsions.

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## Article 5 – Fire Fighting Measures

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### 5.1 Extinguishing Media

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

### 5.2 Special Hazards

No data available.

### 5.3 Precautions for Fire Fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

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## Article 6 – Accidental Release Measures

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### 6.1 Personal Precautions

Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or a respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

### 6.2 Environmental Precautions

Take steps to avoid release into the environment, if safe to do so.

### 6.3 Methods for Containment and Clean-up

Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

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## Article 7 – Handling and Storage

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### 7.1 Handling Precautions

Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged or repeated exposure.

### 7.2 Safe Storage Measures

Keep container tightly closed. Store in accordance with information listed on the product insert.

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## Article 8 – Exposure Controls/Personal Protection

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### 8.1 Control Parameters

Contains no substances with occupational exposure limit values.

### 8.2 Specific Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### 8.3 Personal Protection

**Eye/Face Protection:** Use safety glasses.

**Skin Protection:** Use chemical resistant gloves. Remove and dispose of gloves properly after use. Wash hands thoroughly after use.

**Body Protection:** Wear a lab coat.

**Respiratory Protection:** If risk is present wear a dust respirator.

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## Article 9 – Physical and Chemical Properties

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**Appearance:** White powder

**Odour:** data not available

**Odour Threshold:** data not available

**pH:** data not available

**Melting/Freezing Pt:** data not available

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# SAFETY DATA SHEET

**Boiling Pt:** data not available

**Flash Pt:** data not available

**Explosive Properties:** data not available

**Solubility notes:** May be dissolved DMSO (25 mg/ml); or ethanol (25 mg/ml)

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## Article 10 – Stability and Reactivity

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**10.1 Stability:** Stable under recommended transport or storage conditions

**10.2 Conditions to Avoid:** No data available

**10.3 Incompatibility – Materials to Avoid:** Strong oxidizing agents

**10.4 Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide, nitrogen oxides

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## Article 11– Toxicological Information

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**11.1 Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

**Acute Toxicity:** Oral LD50 (rat): 4mg/kg; Oral LD50 (mouse): 2.5 mg/kg; Intraperitoneal LD50 (rat): 800 ug/kg; Intraperitoneal LD50 (mouse): 390 ug/kg; Subcutaneous LD50 (mouse): 4140 ug/kg.

**Chronic Toxicity:** Investigated as a drug.

For complete information, see Registry of Toxic Effects of Chemical Substances (RTECS) entry. Valinomycin RTECS Number: YV9468000

**Skin Corrosion/Irritation:** data not available

**Eye Damage/Irritation:** data not available

**Respiratory or Skin Sensitization:** data not available

**Germ Cell Mutagenicity:** data not available

**Carcinogenicity:** None according to NIOSH

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## Article 12 – Ecological Information

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### 12.1 Toxicity

Avoid release into the environment. Runoff from the fire control or dilution water may cause pollution.

### 12.2 Degradability

Data not available

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## Article 13 – Disposal Considerations

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### 13.1 Waste Treatment

Product and Contaminated Packaging: Dispose according to national legislation. Contact a licensed chemical disposal company.

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## Article 14 – Transport Information

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### 14.1 DOT

Not dangerous goods

### 14.2 IMDG

Not dangerous goods

### 14.2 IATA

Not dangerous goods

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## Article 15 – Regulatory Information

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

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## Article 16 – Other Information

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The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.

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