

## Parthenolide

IκB Kinase Inhibitor

**Catalog # I03-901B**

Lot # J3942-21

CAS # 20554-84-1

### Product Description

Molecular Formula: C<sub>15</sub>H<sub>20</sub>O<sub>3</sub>

Appearance: White powder

Molecular Weight: 248.3

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

Solubility: May be dissolved DMSO (100 mg/ml); or

ethanol (up to 20 mg/ml)

### Alias

Sesquiterpene lactone found in feverfew (*Tanacetum parthenium*)

### Specific Activity

IκB Kinase Inhibitor

### Storage and Stability

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

Store solutions at -20°C for up to 3 months.

### Scientific Background

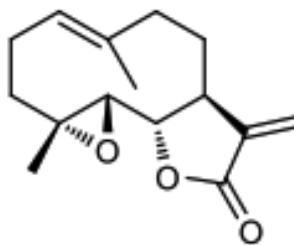
Parthenolide is a natural product that inhibits NF-κB signaling via two mechanisms: direct inhibition of IκB kinase, and prevention of NOD2 dimerization (1,2). It inhibited expression of COX-2 and proinflammatory cytokines, TNF alpha and IL-1 in lipopolysaccharide (LPS)-stimulated macrophages (3). Parthenolide demonstrates antisecretory (4) and spasmolytic (5) activities *in vivo*. It also causes proteasomal degradation of HDAC1 (but not other class I/II HDACs), and cell death through the ATM pathway (6).

### References

1. Kwok BH et al. Chem. Biol. 2001 8:759
2. Zhao L et al. Nutr. Rev. 2011 69:310
3. Hwang D et al. Biochem. Biophys. Res. Commun. 1996 226:810
4. Groenewegen WA & S Heptinstall J. Pharm. Pharmacol. 1990 42:55
5. Pareek A et al. Pharmacogn. Rev. 2011 5:103
6. Gopal YNV et al. Chem. Biol. 2007 14:813

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### Molecular Structure



## Parthenolide

IκB Kinase Inhibitor

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Format	White powder
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Storage & Shipping	Store desiccated as supplied at -20°C for up to 2 years. Store solutions at -20°C for up to 3 months.

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**

# SAFETY DATA SHEET

## Article 1 – Identification of the Substance

**Product Name: Parthenolide**

**Catalog # I03-901B**

*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)

Germ Cell Mutagenicity, Category 2

### 2.2 Label Elements

Classification according to Regulation (EC) No 1272/2008



**GHS Signal Word: WARNING**

#### GHS Hazard Phrases:

H341	Suspected of causing genetic defects
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#### GHS Precaution Phrases:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P281	Wear protective gloves/protective clothing/eye protection/face protection.

#### GHS Response Phrases:

P308+313	IF exposed or concerned: Get medical attention/advice.
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#### GHS Storage and Disposal Phrases:

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

**2.3 Other hazards:** To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

## Article 3 – Composition/Information on Ingredients

### 3.1 Substance

**Product Name(s):** Parthenolide  
**Chemical Name:** Sesquiterpene lactone found in feverfew (Tanacetum parthenium)  
**Molecular Formula:** C<sub>15</sub>H<sub>20</sub>O<sub>3</sub>  
**CAS Number:** 20554-84-1  
**Concentration:** 100%

## Article 4 – First Aid

### 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:** Move to fresh air, and monitor breathing. Give artificial respiration if breathing stops. Get immediate medical attention.

**In Case of Skin Contact:** Remove contaminated clothing. Immediately wash with soap and water for an extended period of time. Consult a doctor. 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.

**If Swallowed:** Rinse out the mouth with water provided person is conscious. Do not give anything by mouth. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

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**4.2 Important Symptoms and Effects:** To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

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## Article 5 – Fire Fighting Measures

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### 5.1 Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special Hazards

In combustion, may emit toxic fumes.

### 5.3 Precautions for Fire Fighters

Wear suitable protection to prevent contact and respirator for fumes, 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

Relocate personnel to a safe area and ensure ventilation is in working order. Wear protective equipment. Avoid dust formation and inhalation of fumes. As conditions warrant, wear an approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

### 6.2 Environmental Precautions

Do not let product enter drains, if safe to do so.

### 6.3 Methods for Containment and Clean-up

Contain spill and collect, as appropriate. Sweep up material without generating dust clouds and place in a sealed container for disposal. Clean surface where spill occurred.

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## Article 7 – Handling and Storage

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### 7.1 Handling Precautions

Use in a well-ventilated area or fume hood. Avoid formation of dust or aerosols. Keep away from sources of ignition. Wear suitable protective clothing. Avoid inhalation, and skin or eye contact. Avoid prolonged or repeated exposure.

### 7.2 Safe Storage Measures

Keep product in a sealed container located in dry well ventilated area. 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

Keep airborne levels low by using a fume hood or local exhaust.

### 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

**Boiling Pt:** data not available

**Flash Pt:** data not available

**Explosive Properties:** data not available

**Solubility notes:** May be dissolved in DMSO (100 mg/ml); or ethanol (up to 20 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:** Moist and hot conditions

**10.3 Incompatibility – Materials to Avoid:** Strong acids/alkalis, strong oxidizing/reducing agents

**10.4 Hazardous Decomposition Products:** Possible toxic fumes upon combustion. No known decomposition information.

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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:** DND-HMN: 202µmol/L; DNI-HMN: 202µmol/L; Orla TDLO (mouse): 50 mg/kg

**Chronic Toxicity:** Investigated as a mutagen, natural product, and primary irritant.

For complete information, see Registry of Toxic Effects of Chemical Substances (RTECS) entry. Parthenolide RTECS Number: LY4220000

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

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

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

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## Article 12 – Ecological Information

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### 12.1 Toxicity

Avoid release into the environment.

### 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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