

## CHIR-99021

Kinase Inhibitor

**Catalog # G09-901B**

Lot # Y4340-4

CAS # 252917-06-9

### Product Description

Molecular Formula: C<sub>22</sub>H<sub>18</sub>Cl<sub>2</sub>N<sub>8</sub>

Appearance: Beige powder

Melting Point: N/A

Molecular Weight: 465.3

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

Solubilization: May be dissolved in DMSO (25 mg/ml, warm)

### Alias

6-[[2-[[4-(2,4-Dichlorophenyl)-5-(5-methyl-1H-imidazol-2-yl)-2-pyrimidinyl] amino] ethyl] amino]-3-pyridinecarbonitrile; CT-99021

### Specific Activity

GSK3β 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

Potent and selective inhibitor of glycogen synthase kinase-3β (GSK3β, IC<sub>50</sub> = 5 nM) and GSK3α (IC<sub>50</sub> = 10 nM) (1). Induces osteoblastogenesis, increases mineralization and inhibits adipogenesis in ST2 cells (2). Promotes replication and survival of pancreatic beta cells (3). Enhances differentiation and reduces proliferation of adult human olfactory epithelium neural precursors (4). Cell permeable and active in vivo.

### References

1. CN Bennett et al. J. Biol. Chem. 2002 277:30998
2. CN Bennett et al. PNAS 2005 102:3324
3. R Musmann et al. J. Biol. Chem. 2007 282:12030
4. AP Manceur et al. Exp. Cell. Res. 2011 317:2086

Catalog #

Aliquot Size

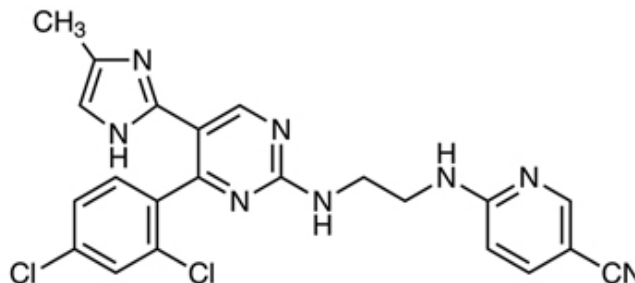
**G09-901B-05**

**5 mg**

**G09-901B-25**

**25 mg**

### Molecular Structure



## CHIR-99021

Kinase Inhibitor

Catalog #

G09-901B

CAS #

252917-06-9

Lot #

Y4340-4

Purity

>98% (HPLC); NMR conforms

Format

Beige powder

Solubilization

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Storage & Shipping

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# SAFETY DATA SHEET

## Article 1 – Identification of the Substance

**Product Name: CHIR-99021**

**Catalog # G09-901B**

*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)

Acute Toxicity: Oral, Category 2

Skin Irritation, Category 2

Eye Irritation, Category 2A

Specific target organ toxicity – (single exposure) Category 3

### 2.2 Label Elements

Classification according to Regulation (EC) No 1272/2008



**GHS Signal Word: DANGER**

#### GHS Hazard Phrases:

H300	Fatal if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

#### GHS Precaution Phrases:

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### GHS Response Phrases:

P301+P310	IF SWALLOWED: Immediately call a poison center/doctor.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

#### GHS Storage and Disposal Phrases:

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

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

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## Article 3 – Composition/Information on Ingredients

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### 3.1 Substance

<b>Product Name(s):</b>	CHIR-99021
<b>Chemical Name:</b>	6-[[[2-[[4-(2,4-Dichlorophenyl)-5-(5-methyl-1H-imidazol-2-yl)-2-pyrimidinyl] amino] ethyl] amino]-3-pyridinecarbonitrile
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>18</sub> Cl <sub>2</sub> N <sub>8</sub>
<b>CAS Number:</b>	252917-06-9
<b>Concentration:</b>	100%

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## Article 4 – First Aid

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### 4.1 Description of First Aid Measures

**General:** Immediately remove any clothing soiled by the product. In case of irregular breathing or respiratory arrest, provide artificial respiration.

**If Inhaled:** In case of unconsciousness, place patient stably in side position for transportation.

**In Case of Skin Contact:** Immediately wash with water and soap and rinse thoroughly.

**In Case of Eye Contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**If Swallowed:** Do not induce vomiting; immediately call for medical health.

**4.2 Important Symptoms and Effects:** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. No further information available.

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## Article 5 – Fire Fighting Measures

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### 5.1 Extinguishing Media

Use fire-fighting measures that suit the environment. A solid water stream may be insufficient.

### 5.2 Special Hazards

No further relevant information available.

### 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

Not required.

### 6.2 Environmental Precautions

Do not allow to enter sewers/surface or ground water.

### 6.3 Methods for Containment and Clean-up

Dispose contaminated material as waste according to Article 13. Ensure adequate ventilation.

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## Article 7 – Handling and Storage

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### 7.1 Handling Precautions

Thorough dedusting.

### 7.2 Safe Storage Measures

Keep receptacle tightly sealed.

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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 fumehood or local exhaust.

### 8.3 Personal Protection

**General protective and hygienic measures:** Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

**Eye/Face Protection:** Wear tightly sealed goggles.

**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:** Beige 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 (25 mg/ml, warm)

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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 further relevant information available.  
**10.3 Incompatibility – Materials to Avoid:** Strong oxidizing agents  
**10.4 Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>). Possible toxic fumes upon combustion.

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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:** on the skin – irritant to skin and mucous membranes. On the eye – irritating effect.  
**Chronic Toxicity:** data not available  
**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**  
Water hazard class 1 (self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
**12.2 Degradability**  
Data not available

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## Article 13 – Disposal Considerations

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**13.1 Waste Treatment**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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## Article 14 – Transport Information

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**14.1 DOT**  
6.1 Toxic substances  
**14.2 IMDG**  
6.1 Toxic substances  
**14.2 IATA**  
III

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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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