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Produktinformation



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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Phosphatase Inhibitor Cocktail C: sc-45065

BACKGROUND

Crude cell extracts contain a number of endogenous enzymes, such as proteases and phosphatases, which are capable of modifying the proteins present in the extract. The best way to improve the yield of intact proteins is to add inhibitors of these enzymes known to be present in the source material. Phosphatase Inhibitor Cocktail C has been optimized and tested for L-isozymes of alkaline phosphatase as well as serine-threonine protein-phosphatases, such as protein phosphatases 1 and 2A.

REFERENCES

1. Jain, M.K. 1982. Handbook of Enzyme Inhibitors. New York, John Wiley and Sons, 222.
2. Jain, M.K. 1982. Handbook of Enzyme Inhibitors. New York, John Wiley and Sons, 334.
3. Borgers, M. and Thone, F. 1975. The inhibition of alkaline phosphatase by L-p-bromotetramisole. *Histochemistry* 44: 277-280.
4. Metaye, T., Mettey, Y., Lehuède, J., Vierfond, J.M. and Lalegerie, P. 1988. Comparative inhibition of human alkaline phosphatase and diamine oxidase by bromo-levamisole, cimetidine and various derivatives. *Biochem. Pharmacol.* 37: 4263-4268.
5. Ishihara, H., Martin, B.L., Brautigan, D.L., Karaki, H., Ozaki, H., Kato, Y., Fusetani, N., Watabe, S., Hashimoto, K., Uemura, D., et al. 1989. Calyculin A and okadaic acid: inhibitors of protein phosphatase activity. *Biochem. Biophys. Res. Commun.* 159: 871-877.
6. Suganuma, M., Fujiki, H., Furuya-Suguri, H., Yoshizawa, S., Yasumoto, S., Kato, Y., Fusetani, N. and Sugimura, T. 1990. Calyculin A, an inhibitor of protein phosphatases, a potent tumor promoter on CD-1 mouse skin. *Cancer Res.* 50: 3521-3525.

PRODUCT

Each vial contains 1 ml phosphatase inhibitor cocktail solubilized in DMSO:H₂O (1:1.3). A description of each inhibitor is given below.

Cantharidin inhibits protein phosphatase 2A (PP-2A) (1, 2).

(-)-p-Bromotetramisole oxalate inhibits alkaline phosphatases (3, 4).

Calyculin A, Discodermia calyx inhibits protein phosphatases 1 and 2A (PP-1 and PP-2A) (5, 6).

PRECAUTIONS

Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

STORAGE

Shipped on wet ice. Following initial thaw, aliquot and freeze (-20° C). Dilute 1:50 just prior to use.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

RECOMMENDED USAGE

One ml of Phosphatase Inhibitor Cocktail C will inhibit phosphatase activities found in the 100,000 x g supernatant from human placenta, bovine liver, rabbit muscle, A431 or Jurkat cell extracts at a protein concentration of approximately 5mg/ml.

One ml of cocktail solution is used to prepare 50 ml of supernatant that contains a maximum of 250 mg of protein. Therefore, 1 ml of cocktail should be added per 250 mg of protein extracted from the tissue used, or 1 ml of cocktail solution per 50 ml of extraction buffer.

Phosphatase Inhibitor Cocktail C has been tested on cell extracts from various animal tissue (cytosolic and Triton X-100 extracts of bovine liver and human placenta, cytosolic extract of rabbit muscle, Triton X-100 extracts of A431 and Jurkat cells). It has been found to inhibit L-isozymes of alkaline phosphatase as measured with p-nitrophenyl phosphate (pNPP) at pH 10.4, and serine/threonine protein phosphatase activities as measured by dephosphorylation of ³²P-Serine/Threonine-Myelin basic protein or ³²P-Serine phosphorylase at pH 7.6.

Phosphatase Inhibitor Cocktail C: sc-45065



The Power to Question

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product name	Phosphatase Inhibitor Cocktail C	Supplier	Santa Cruz Biotechnology, Inc. 2145 Delaware Avenue Santa Cruz, California 95060 800.457.3801 or 831.457.3800
		Emergency	ChemWatch Within the US & Canada: 877-715-9305 Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. Composition and Information on Ingredients

<u>Ingredient Name</u>	<u>CAS No.</u>	<u>EU Symbol</u>	<u>R-Phrases</u>
Cantharidin	56-25-7	T+	R28, R36/37/38

Note: See section 8 for occupational exposure limits and section 11 for LC50/LD50 information.

3. Hazards Identification

Primary Hazards and Critical Effects	: DANGER! MAY BE FATAL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing dust. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.
Physical/Chemical hazards	: Not applicable.
Human Health Hazards	: Very toxic if swallowed. Irritating to eyes, respiratory system and skin.
Environmental Hazards	: Not applicable.

4. First Aid Measures

Inhalation	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact	: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Eye Contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Notes to Medical Doctor	: Not available.

5. Fire-Fighting Measures

Extinguishing Media	: Use foam or all purpose dry chemicals to extinguish.
Fire-Fighting Procedures	: Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Fire/Explosion Hazards	: Not applicable.
Hazardous Decomposition Products	: These products are carbon oxides (CO, CO2).

6. Accidental Release Measures

Personal Precautions	: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).
Environmental Precautions and Clean-up Methods	: If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal. Minimize contact of spilled material with soils to prevent runoff to surface waterways.

Note: See section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and Storage

Handling	:	Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing dust. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.
Storage	:	Keep container tightly closed. Keep container in a cool, well-ventilated area.
Packaging Materials	:	Use original container.

8. Exposure Controls and Personal Protection

Occupational Exposure Limits

<u>Ingredient Name</u>	<u>Occupational Exposure Limits</u>
RC0880	Not available.

Engineering Controls : Open handling is not permitted. All handling must be performed in a glove box or other totally enclosed system.

Personal Protective Equipment Respiratory System

: Use an approved, properly fitted, HEPA filter cartridge respirator, or a respirator of greater protection if there is the potential to exceed the exposure limit(s).

Skin and Body : Disposable outer garments, or impervious garments of equal or greater protection.

Hands : Use latex gloves. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits).

Eyes : Safety glasses. Goggles, face shield, or other full-face protection if potential exists for direct exposure to dust.

9. Physical and Chemical Properties

Kit Components

5 x 1ml vial Phosphatase Inhibitor Cocktail, containing Cantharidin (RC0880) (-)-p-Bromotetramisole Oxalate, Calyculin A, *Discodermia calyx*,

Flash Point Not available.

10. Stability and Reactivity

Stability : The product is stable.

Conditions and Materials to Avoid : Reactive with oxidizing agents.

Hazardous Decomposition Products : Not available.

11. Toxicological Information

<u>Toxicity Data</u>	<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	RC0880	LDLo	0.428 mg/kg	Oral	Human
		LDLo	20 mg/kg	Oral	Rabbit
		LDLo	50 mg/kg	Oral	Dog

Routes of Entry : Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Acute Effects

Inhalation : Moderately irritating to the respiratory system.

Ingestion : Very toxic if swallowed.

Skin Contact : Moderately irritating to the skin.

Eye Contact : Moderately irritating to the eyes.

Chronic Effects

Adverse Effects : Not available.

Target Organs : Not available.

Carcinogenic Effects : Classified None. by NIOSH. 3 (Not classifiable for human.) by IARC.

Mutagenic Effects : Not available.

Developmental and Teratogenic Effects : Not available.

Reproductive Effects : Not available.

Other Information : Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

12. Ecological Information

<u>Ecotoxicity Data</u>	<u>Ingredient Name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
	Cantharidin	Not available.	Not available.	Not available.

13. Disposal Consideration

Waste Handling and Disposal : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport Information

Air

IATA-DGR Class : Not controlled under IATA.

Packing Group

15. Regulatory Information

EU Regulations

- Hazard Symbol(s)** : T+
- Risk Phrases** : R28- Very toxic if swallowed.
R36/37/38- Irritating to eyes, respiratory system and skin.
- Safety Phrases** : S1/2- Keep locked up and out of the reach of children.
S28- After contact with skin, wash immediately with plenty of [***].
S36/37- Wear suitable protective clothing and gloves.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Regulations

- Haz-Com Standard** : Not controlled under the HCS (United States).
- EPA** : TSCA 8(b) inventory: cantharidin
SARA 302/304/311/312 extremely hazardous substances: cantharidin
SARA 302/304 emergency planning and notification: cantharidin
SARA 302/304/311/312 hazardous chemicals: cantharidin
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: cantharidin: Immediate (Acute) Health Hazard
- State** : Pennsylvania RTK: cantharidin: (environmental hazard, generic environmental hazard)
Massachusetts RTK: cantharidin
New Jersey: cantharidin

Canadian Regulations

- WHMIS** : Not controlled under WHMIS (Canada).
- CEPA** : CEPA NDSL: cantharidin
- Provincial** : No products were found.

16. Other Information

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.