

SAFETY DATA SHEET

Cat# K937-500 Acid Phosphatase Cell Cytotoxicity Assay Kit

SDS DATE: Jun 20, 2018

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Acid Phosphatase Cell Cytotoxicity Assay Kit

PRODUCT CODES: Cat# K937-500

MANUFACTURER: BioVision, Inc.

DIVISION:

ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035

EMERGENCY PHONE: 858-373-8066

CHEMTREC PHONE:

OTHER CALLS: 408-493-1800

FAX PHONE: 408-493-1801

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
ACP Buffer	Liquid	50 ml	No hazards
Substrate (20 tabs)	--	2 vials	No hazards
Stop Solution	(contains Sodium hydroxide)	10 ml	See below
20 mM Doxorubicin	Doxorubicin in DMSO	100 µl	See below

DMSO:

Emergency Overview

OSHA Hazards: Combustible liquid, Target organ effect

Target Organs: Eyes, Skin

GHS Classification: Flammable liquids (Category 4)

GHS Label elements, including precautionary statements

Pictogram: none

Signal word: Warning

Hazard statement(s): H227 Combustible liquid

Precautionary statement(s): none

HMIS Classification

Health hazard: 0

Chronic Health Hazard: *

Flammability: 2

Physical hazards: 0

NFPA Rating

Health hazard: 0

Fire: 2

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: May be harmful if swallowed.

Aggravated Medical Condition: Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

Sodium hydroxide:

Emergency Overview

GHS Classification:

Corrosive to metals (Category 1)

Skin corrosion (Category 1A)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Danger

Hazard statement(s):

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

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H318 Causes serious eye damage.
H402 Harmful to aquatic life.

Precautionary statement(s): P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard: 3
Flammability: 0
Physical hazards: 1

NFPA Rating

Health Hazard: 3
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes severe eye burns.

Ingestion: May be harmful if swallowed.

Doxorubicin

Emergency Overview

OSHA Hazards: Target organ effect, Harmful by ingestion, Irritant, Carcinogen

Target Organs: Heart, bone marrow, blood, liver

GHS Classification: Acute toxicity, Oral (Category 4)
Carcinogenicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Danger

Hazard statement(s):

H302 Harmful if swallowed.

H350 May cause cancer.

Precautionary statement(s):

P201 Obtain special instructions before use.

P308+P313 IF exposed or concerned: Get medical advice/attention.

HMIS Classification

Health hazard: 2
Chronic health hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health Hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: Harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Harmful if swallowed.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
DMSO	67-68-5	200-664-3	78.13	C ₂ H ₆ OS	100%
Sodium hydroxide	1310-73-2	215-185-5	40.00	NaOH	<10%
Doxorubicin	25316-40-9	--	--	--	<10%

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SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

DMSO:

Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous combustion products formed under fire conditions – no data available.

Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid inhalation of vapor or mist. Avoid contact with skin and eyes.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 4 °C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

DMSO:

Components	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

Sodium hydroxide

Components	CAS-No.	Value	Control parameters	Basis
Sodium hydroxide	1310-73-2	CEIL	2 mg/m ³	USA. ACGIH Threshold Values (TLV)
		C	2 mg/m ³	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	2 mg/m ³	USA. Occupational Exposure Limits (OSHA) – Table Z-1 – Limits for Air Contaminants
		C	2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye, skin, & upper respiratory tract irritation.			
		C	2 mg/m ³	USA. NIOSH Recommended Exposure Limits

Doxorubicin

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

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Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (Isopropanol)

Property	DMSO	Sodium hydroxide	Doxorubicin
Appearance:	Clear liquid	Colorless liquid	Orange-red powder
pH:	No data available	14.0	No data available
Water Solubility:	Completely miscible	Soluble	No data available
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	189 °C (372 °F)	105-140 °C (221-284 °F)	No data available
Melting Point (°C):	16-19 °C (61-66 °F)	-12-10 °C (10-50 °F)	216 °C (421 °F)
Flash Point (°C):	87 °C (189 °F)	No data available	No data available
Ignition Temperature (°C):	301 °C (574 °F)	No data available	No data available
Density:	1.1 g/ml	1.327 g/cm ³	No data available

SECTION 10: STABILITY AND REACTIVITY

Property	DMSO	Sodium hydroxide	Doxorubicin
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	Heat, flames, sparks	Not data available	No data available
Materials to avoid:	Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents	Water, acids, organic materials, chlorinated solvents, aluminum, phosphorus, tin/tin oxides, zinc	Strong oxidizing agents
Hazardous decomposition products:	Carbon oxides, sulfur oxides	Sodium oxides	No data available

SECTION 11: TOXICOLOGICAL INFORMATION

DMSO:

Acute toxicity: LD50 Oral – rat – 14,500 mg/kg

LC50 Inhalation – rat – 4 h – 40250 ppm

LD50 Dermal – rabbit – >5,000 mg/kg

Skin corrosion/irritation: Skin – rabbit – no skin irritation – 4h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Genotoxicity in vitro – mouse – lymphocyte: Cytogenetic analysis

Genotoxicity in vitro – mouse – lymphocyte: Mutation in mammalian somatic cells

Genotoxicity in vivo – rat – Intraperitoneal: Cytogenetic analysis

Genotoxicity in vivo – mouse – Intraperitoneal: DNA damage

Carcinogenicity: Carcinogenicity – rat – Oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Skin and appendages: other: tumors.

Carcinogenicity – mouse – Oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Leukemia skin and appendages: other: tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Reproductive toxicity – rat – Intraperitoneal → Effects on fertility: abortion

Reproductive toxicity – rat – Intraperitoneal → Effects on fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

Reproductive toxicity – rat – Subcutaneous → Effects on fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants). Effects on fertility: litter size (e.g. # fetuses per litter; measured before birth)

Reproductive toxicity – mouse – Oral → Effects on fertility: post-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system.

Teratogenicity: Developmental toxicity – mouse – Intraperitoneal: Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus).

Specific developmental abnormalities: musculoskeletal system

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

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Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: May be harmful if swallowed.

Aggravated Medical Condition: Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

Signs and Symptoms of Exposure: Effects due to ingestion may include: nausea, fatigue, and/or headache.

Additional information: RTECS: PV6210000

Sodium hydroxide:

Acute toxicity: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes severe eye burns.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause a burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Synergistic Effects: no data available

Additional information: RTECS: not available

Doxorubicin:

Acute toxicity: LD50 Oral – mouse – 698 mg/kg

Remarks: Sense organs and special senses (nose, eye, ear, and taste)→ Eye: Lacrimation. Behavioral: Muscle weakness. Diarrhea.

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Possible human carcinogen.

IARC: No component of the product present at levels greater than or equal to 0.1% is identified as probable, or possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: Harmful if absorbed through skin. May cause skin irritation.

Eyes: Causes eye irritation.

Ingestion: Harmful if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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Additional information: RTECS: No data available

SECTION 12: ECOLOGICAL INFORMATION

DMSO:

Elimination information (persistence and degradability): no data available

Ecotoxicity effects: Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h; LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h; Toxicity to daphnia and other aquatic invertebrates.; EC50 - Daphnia pulex (Water flea) - 27,500 mg/l
Toxicity to algae EC50 - Lepomis macrochirus (Bluegill) - > 400,000 mg/l - 96 h

Further information on ecology: no data available

Sodium peroxide:

Persistence and degradability: no data available

Toxicity: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solven and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DMSO:

DOT (US): UN-Number: 1993, Class: CBL, Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

Sodium hydroxide:

DOT (US): UN-Number: 1824, Class: 8, Packing group: II; Proper shipping name: Sodium hydroxide solution; Reportable Quantity (RQ): 2857 lbs. Marine pollutant: No; Poison Inhalation Hazard: No

IMDG: UN-Number: 1824, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: SODIUM HYDROXIDE SOLUTION; Marine pollutant: No

IATA: UN-Number: 1824, Class: 8, Packing group: II; Proper shipping name: Sodium hydroxide solution

Doxorubicin:

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.

SARA 311/312 Hazards: Sodium hydroxide: Acute Health Hazard

DMSO: Fire Hazard, Chronic Health Hazard

Doxorubicin: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

Pennsylvania Right To Know Components:

Dimethyl sulfoxide, CAS-No. 67-68-5; Revision date: --

Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

Doxorubicin, CAS-No. 25316-40-9

New Jersey Right To Know Components:

Dimethyl sulfoxide, CAS-No. 67-68-5; Revision date: --

Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

Doxorubicin, CAS-No. 25316-40-9

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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EU regulations:

Component	Risk Phrases	Safety Phrases
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45
Sodium hydroxide	R35, R41, R52	S22, S36/37/39, S45, S61
Doxorubicin	--	--

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

PREPARATION INFORMATION:

DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioVision, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.