

1. IDENTIFICATION**Product Identification**

Product Name Human/Mouse/Rat Phospho-MKK3 (S189) Cell-Based ELISA

Catalog Number CBEL-MKK3

Kit Components**Usage**

This product is furnished for LABORATORY RESEARCH USE ONLY. Not for diagnostic or therapeutic use.

Supplier Identification

Company RayBiotech, Inc.
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2. HAZARDS IDENTIFICATION**Hazardous Ingredients**

1. The Stop Solution contains Sulfuric Acid.
2. The Fixing Solution contains 4% Formaldehyde solution.
3. The Quenching Buffer Concentrate contains 30% Hydrogen Peroxide.

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Sulfuric Acid (Stop Solution): Skin Corr./Irrit. 1A (H314)

Formaldehyde solution (fixing solution): Acute toxicity (Category 4, Oral, H302), Skin Sensitisation (Category 1, H317), Germ cell mutagenicity (Category 2, H341), Carcinogenicity (Category 1B, H341)

Hydrogen Peroxide (quenching buffer): Acute toxicity, Oral (Category 4, H302), Skin corrosion (Category 1A, H314), Serious eye damage (Category 1, H318), Specific target organ toxicity - single exposure (Category 3, Respiratory system, H335), Short-term (acute) aquatic hazard (Category 2, H401), Long-term (chronic) aquatic hazard (Category 3, H412)

GHS Label Elements

Hazard Pictograms



Signal Word/s

Warning

Danger

Danger

Hazard Statements	Sulfuric Acid (Stop Solution): Causes skin irritation (H315); Causes serious eye irritation (H319) Formaldehyde solution (fixing solution): May cause cancer (H350). Harmful if swallowed (H302). May cause an allergic skin reaction (H317). Suspected of causing genetic defects (H341). Hydrogen Peroxide (quenching buffer): Harmful if swallowed (H302). Causes severe skin burns and eye damage (H314). May cause respiratory irritation (H335). Toxic to aquatic life (H401). Harmful to aquatic life with long lasting effects (H412).
Response	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. SKIN CONTACT: Take off immediately all contaminated clothing. Rinse skin with water/shower. INHALATION: Move to an outside area and breath fresh air. Clear the nose by blowing.
Storage	Not applicable.
Disposal	Not applicable.
Hazards not otherwise classified	
None known.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Numbers/other identifiers

<u>Ingredient Name</u>	<u>%</u>	<u>CAS Number</u>
Sulfuric Acid	0.2	7664-93-9
Formaldehyde solution	4	50-00-0
Hydrogen Peroxide	30	7722-84-1

4. FIRST-AID MEASURES

Description of Necessary First Aid Measures

Eye Contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Skin Contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing and clean shoes before reuse.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Potential Acute Health Effects

Eye Contact

Sulfuric Acid (Stop Solution): Causes serious eye damage (H319)

Skin Contact

Sulfuric Acid (Stop Solution): Causes skin irritation (H315)

Over-Exposure Signs/Symptoms

No specific data.

Notes to Physician

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific Treatments

No specific treatment

Protection of First-Aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

5. FIRE FIGHTING MEASURES

Extinguishing Media

Use an extinguishing agent suitable for the surrounding fire, such as water spray, carbon dioxide, dry chemical power or appropriate foam. Prevent contact with skin and eyes.

Chemical Hazards from Fire

In a fire or if heated, a pressure increase will occur and the component containers may burst.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

For Non-Emergency Personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For Emergency Responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For Non-Emergency Personnel" above.
Environmental Precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protective Equipment	Wear respirator, chemical safety goggles, rubber boots and rubber gloves.

Methods and Materials for Containment and Cleaning Up

Small Spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large Spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. STORAGE AND HANDLING

Storage

Store the entire kit frozen at -20°C upon arrival.

Handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Permissible Exposure Limits (PELs)

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate Engineering Controls

Showers
Eyewash stations
Ventilation systems

Protective Equipment

Wear suitable protective clothing, including gloves, safety glasses, dust mask, and a laboratory coat.

Special Precautions

Not for human or drug use. Not for household use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colorless
Odor	Odorless
Physical State	Liquid
pH	N/A
Boiling Point	N/A
Melting Point	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Specific Gravity	N/A
Evaporation Rate	N/A
Solubility in Water	N/A
Odor Threshold	N/A
Coefficient of Water/Oil Distribution	N/A

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal handling procedures.
Hazardous Reactions	Under normal conditions of storage and use, hazardous reactions will not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Ingredient Name	Result	Species	Dose
Sulfuric Acid	LD50	Oral rat Inhalation rat	347 ppm 2140 mg/kg
Formaldehyde	LD50	Oral rat Inhalation rat Skin rabbit Draize test, rabbit, eye	100 mg/kg 64000 ppm/4H 270 uL/kg 750 ug/24H Severe
Hydrogen Peroxide	LD50	Oral rat Inhalation rat Skin rat	1518 mg/kg 2 gm/m3/4H 3 gm/kg

Carcinogenicity

CAS# 50-00-0:
ACGIH: A2 - Suspected Human Carcinogen
California: carcinogen; initial date 1/1/88
NIOSH: occupational carcinogen
NTP: Suspect carcinogen
OSHA: Possible Select carcinogen CAS# 7722-84-1:
IARC: Group 3 carcinogen

Sensitization

Not Available

Mutagenicity

Not available

Reproductive Toxicity

Not Available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)	Not available
Aspiration hazard	Not available
Likely routes of exposure	Routes of entry anticipated: Oral, Dermal, Inhalation.
<u>Potential acute health effects</u>	
Eye contact	Formaldehyde solution (fixing solution): Eye irritant. Hydrogen Peroxide (quenching buffer): May cause severe eye damage.
Inhalation	Sulphuric Acid (stop solution): Harmful if inhaled. Hydrogen Peroxide (quenching buffer): May be harmful if inhaled.
Ingestion	Formaldehyde solution (fixing solution): Risk of serious damage if swallowed. Hydrogen Peroxide (quenching buffer): Harmful if swallowed.
Skin Contact	Formaldehyde solution (fixing solution): Skin irritant. Hydrogen Peroxide (quenching buffer): Causes severe skin burns
12. ECOLOGICAL INFORMATION	
Ecotoxicity	No data available
Persistence and degradability	No data available
Bioaccumulation/accumulation	No data available
Mobility in environmental media	No data available
Other hazardous effects	May be harmful to the environment, particularly aquatic organisms.
13. DISPOSAL CONSIDERATIONS	
Disposal methods	Disposal should be in accordance with applicable national, state, and local laws and regulations. Local regulations may be more stringent than national or state requirements. Verify local and state regulations before discharging into public sewers or landfills. Do not dump into any body of water. Contact a licensed professional waste disposal service for appropriate methods of disposal.
14. TRANSPORT INFORMATION	
DOT	Not dangerous goods.
IATA	Not dangerous goods.
ADR	Not dangerous goods.
15. REGULATORY INFORMATION	
United States (TSCA)	All ingredients are on the inventory or exempt from listing.
Canada (DSL / NDSL)	All ingredients are on the inventory or exempt from listing.
SARA 302 Components	Sulfuric Acid (Stop Solution): CAS 7664-93-9 Formaldehyde solution (fixing solution): 50-00-0 Hydrogen Peroxide (quenching buffer): 7722-84-1
SARA 313 Components	Sulfuric Acid (Stop Solution): Concentration <3% Formaldehyde solution (fixing solution): Concentration <5% Hydrogen Peroxide (quenching buffer): Concentration <5%
SARA 311/312 Hazards	Sulfuric Acid (Stop Solution): Health hazard - Skin corrosion or Irritation Health hazard - Serious eye damage or eye irritation
California Prop. 65 Components	Sulfuric Acid (Stop Solution): WARNING: This product contains a chemical known to the State of California to cause cancer.
16. OTHER INFORMATION	

Disclaimer

The above information was obtained from sources available at the time of revision and believed to be accurate and reliable. The information included is not intended to be all inclusive and should only be used as a guide. RayBiotech shall not be held liable for any damage resulting from use, handling, or contact with the above product.

Last Revised

September 1, 2020

