

**1. IDENTIFICATION**

**Product Identification**

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

Catalog Number CBEL-MKK3

**Usage**

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

**Supplier Identification**

Company RayBiotech, Inc.  
3607 Parkway Lane, Suite 100  
Norcross, GA 30092  
USA  
Telephone 1-888-494-8555 (Toll Free); 770-729-2992  
Fax 770-206-2393  
Website [www.RayBiotech.com](http://www.RayBiotech.com)  
Email [info@raybiotech.com](mailto:info@raybiotech.com)

**Emergency Telephone Number**

Emergency Phone # 1-888-494-8555

**2. HAZARDS IDENTIFICATION**

**Hazardous Ingredients**

1. The Stop Solution contains 0.2% 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**

Sulphuric Acid (stop solution): Acute Toxicity

Formaldehyde solution (fixing solution): Serious Eye Damage/Eye Irritation (Category 1), Skin Sensitisation (Category 1), Carcinogenicity (Category 1A), Skin Corrosion/Irritation (Category 2), Hazardous to the aquatic environment (Acute Category 3), Flammable Liquid (Category 4), Acute Toxicity (Oral Category 4)

Hydrogen Peroxide (quenching buffer): Oxidizing Liquids (Category 1), Skin and Eye Damage, Corrosion or Irritation (Category 1A), Acute Toxicity, Oral (Category 4), Acute Toxicity, Inhalation (Category 5)

**GHS Label Elements**

Hazard Pictograms



Signal Word/s

Warning      Danger      Danger      Danger

Hazard Statements	<p>Sulphuric Acid (stop solution): Harmful if inhaled.          Formaldehyde solution (fixing solution): Risk of serious damage if swallowed; Irritating to eyes and skin.          Hydrogen Peroxide (quenching buffer): May cause fire or explosion; strong oxidizer. Keep away from heat, sparks, open flames, and hot surfaces.          Causes severe skin burns and eye damage. Harmful if swallowed. Do not eat, drink or smoke when using this product. May be harmful if inhaled.          IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.</p>
Response	<p>EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.          SKIN CONTACT: Wash with clean water or soap and water.          INHALATION: Move to an outside area and breath fresh air. Clear the nose by blowing.</p>
Storage	Not applicable.
Disposal	Not applicable.
<b>Hazards not otherwise classified</b>	
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

Any percentage shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

**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.

### 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.

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## 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

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## 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.

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## 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/m <sup>3</sup> /4H 3 gm/kg

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;

### Carcinogenicity

### Sensitization

Not Available

### Mutagenicity

Not available

### Reproductive Toxicity

Not Available

### Specific target organ toxicity (single exposure)

Not available

<b>Specific target organ toxicity (repeated exposure)</b>	Not available
<b>Aspiration hazard</b>	Not available
<b>Likely routes of exposure</b>	Routes of entry anticipated: Oral, Dermal, Inhalation.
<b><u>Potential acute health effects</u></b>	
<b>Eye contact</b>	Formaldehyde solution (fixing solution): Eye irritant. Hydrogen Peroxide (quenching buffer): May cause severe eye damage.
<b>Inhalation</b>	Sulphuric Acid (stop solution): Harmful if inhaled. Hydrogen Peroxide (quenching buffer): May be harmful if inhaled.
<b>Ingestion</b>	Formaldehyde solution (fixing solution): Risk of serious damage if swallowed. Hydrogen Peroxide (quenching buffer): Harmful if swallowed.
<b>Skin Contact</b>	Formaldehyde solution (fixing solution): Skin irritant. Hydrogen Peroxide (quenching buffer): Causes severe skin burns
<b>12. ECOLOGICAL INFORMATION</b>	
<b>Ecotoxicity</b>	No data available
<b>Persistence and degradability</b>	No data available
<b>Bioaccumulation/accumulation</b>	No data available
<b>Mobility in environmental media</b>	No data available
<b>Other hazardous effects</b>	May be harmful to the environment, particularly aquatic organisms.
<b>13. DISPOSAL CONSIDERATIONS</b>	
<b>Disposal methods</b>	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.
<b>14. TRANSPORT INFORMATION</b>	
<b>DOT</b>	Not dangerous goods.
<b>IATA</b>	Not dangerous goods.
<b>ADR</b>	Not dangerous goods.
<b>15. REGULATORY INFORMATION</b>	
<b>United States (TSCA)</b>	All ingredients are on the inventory or exempt from listing.
<b>Canada (DSL / NDSL)</b>	All ingredients are on the inventory or exempt from listing.
<b>SARA 302 Components</b>	Sulfuric Acid (stop solution): 7664-93-9 Formaldehyde solution (fixing solution): 50-00-0 Hydrogen Peroxide (quenching buffer): 7722-84-1
<b>SARA 313 Components</b>	Sulfuric Acid (stop solution): Concentration <5% Formaldehyde solution (fixing solution): Concentration <5% Hydrogen Peroxide (quenching buffer): Concentration <5%
<b>SARA 311/312 Hazards</b>	No known hazards.
<b>California Prop. 65 Components</b>	This product does not contain any Proposition 65 chemicals.
<b>16. OTHER INFORMATION</b>	
<b>Disclaimer</b>	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.

