

MATERIAL SAFETY DATA SHEET

According to EC Directive 1907/2006/EC.

Date of Issue: 28-02-2008

Replaces Issue of: ---

1. Identification of the substance/preparation and of the company

Product name: cAMP RIA kit
Product code: RK-509
Product formal name: Research reagent
Application of the substance/preparation: In-vitro research test KIT

Manufacturer/Supplier:



Institute of Isotopes Co., Ltd.
Konkoly Thege Miklós út 29-33
H-1121 Budapest, Hungary
Phone number: (36-1) 391-0826
Fax number: (36-1) 392-2575, 395-9247

Further information available from:

www.izotop.hu

Email address of the competent person:

immuno@izotop.hu

Information in case of emergency:

06-80-201199

Egészségügyi-Toxikológiai szolgálat

2. Hazards identification:

Hazard description: Xn Harmful.

Information concerning particular hazards for human and environment:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Harmful if swallowed.

Flammable. Harmful by inhalation and if swallowed. Causes burns (**Acetic Anhydride**).

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes severe burns (**Triethylamine**).

3. Composition / Information on ingredients:

Component No.	Component Name	Description
1	Tracer	1 vial, lyophilized, ^{125}I -cAMP, ~79kBq, 2.1 μCi
2	Non-acetylation Standard	1 vial, lyophilized, containing cyclic nucleotide
3	Acetylation Standard	1 vial, lyophilized, containing cyclic nucleotide
4	Antiserum	1 vial, lyophilized, containing antibody
5	Assay Buffer Concentrate	1 vial, 10 ml, containing animal origin material and detergent in buffer
6	Separating Second Antibody Reagent	1 vial, 58 ml, containing antibody and detergent in buffer
7	Acetic Anhydride	1 vial, 1 ml
8	Triethylamine	1 vial, 2 ml

Component No.	Hazard description
1	Contains radioactive material Contains animal origin, biologically derived material
2,3,4	Contains animal origin, biologically derived material
5	Contains detergent and animal origin, biologically derived material
6	Contains detergent; animal origin, biologically derived material and sodium azide as preservatives (0.1%)
7	Contains Acetic Anhydride
8	Contains Triethylamine

Dangerous component(s):

	Symbols	R-phrases	CAS #	EC no
Sodium azide	T+ , N	28-32-50/53	26628-22-8	247-852-1
Acetic Anhydride	C	10-20/22-34	108-24-7	203-564-8
Triethylamine	F , C	11-20/21/22-35	121-44-8	204-469-4

Hazard codes:

T+ Very toxic
N Dangerous for the environment
C Corrosive
F Highly Flammable

R-phrases:

10 Flammable
11 Highly flammable.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
28 Very toxic if swallowed.
32 Contact with acids liberates very toxic gas.
34 Causes burns.
35 Causes severe burns.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Additional information: Iodine 125 is a radioactive tracer element with 60.2 day radioactive half-life. Emits gamma rays. Avoid contact with components, which contain sodium azide and do not ingest. Avoid contact with acetic anhydride and triethylamine and do not ingest. All components may contain human or animal biologically derived materials.

4. First Aid:

After inhalation: Remove victim to fresh air. If breath labored, administer oxygen as needed. If victim is not breathing, administer artificial respiration or CPR.

After eye contact: Flush with copious amount of fresh water for at least 15 minutes.

Acetic anhydride and triethylamine: Assure adequate flushing by separating the eyelids with fingers. Call a physician.

After skin contact: Wash well with mild soap and copious amount of fresh water.

Acetic anhydride and triethylamine: Remove contaminated clothing and shoes. Call a physician.

After swallowing: Flush mouth with copious water (do not swallow rinse water).
Acetic anhydride and triethylamine: Do not induce vomiting. Call a physician.

General information: If ingested, or in case of feeling unwell, seek medical advice urgently. If possible, save sample of material that caused reaction for use in determination of appropriate treatment.

5. Fire extinguishing measures:

Suitable extinguishing agents: Use extinguishing media (dry sand, cement) appropriate to surrounding fire. Dangerous gases, which are damaging to health, do not form in dangerous quantities.
Acetic anhydride and triethylamine: Carbon dioxide, dry chemical powder, or appropriate foam.

Extinguishing agents not to be used: **Acetic anhydride:** Water.

Protective equipment: No special equipment or procedures are required.
Acetic anhydride and triethylamine: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6. Accidental release measures:

Personal precaution: Ensure adequate ventilation. Use personal protective equipment.
Acetic anhydride and triethylamine: Evacuate area in case of leak or spill.

Environmental precaution: Prevent further leakage or spillage if safe to do so.

Methods for cleaning up, after spillage:

- Biological vials:** Absorb spills of reagents and samples with absorbent paper. Clean spill area with a freshly prepared sodium hypochlorite (bleach) solution and absorb it.
- Radioactive vials:** The radioactive material should be wiped up immediately. Wastes have to be treated according to the country's legislation.
- Acetic anhydride:** Cover with an activated carbon adsorbent, take up and place in closed containers. Transport outdoors. Ventilate area and wash spill site after material pickup is complete.
- Triethylamine:** Cover with an activated dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7. Handling and storage:

Handling: Wear suitable personal protective equipment. Do not pipette samples or reagents by mouth. Avoid splashing. Use all reagents in accordance with relevant package insert. Avoid high temperature and freezing. Do not eat, drink, smoke or apply cosmetics in laboratory areas.
Acetic anhydride and triethylamine: Do not breathe vapour. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage: Store kit reagents in accordance with the relevant package insert. Do not store together with ignitable and flammable substances.

Acetic anhydride and triethylamine: Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

Special requirements: Acetic anhydride reacts violently with water.

8. Exposure controls/personal protection:

Engineering controls: **Acetic anhydride and triethylamine:** Safety shower and eye bath. Use only in a chemical fume hood.

Personal protective equipment:

Body and skin protection: Wear laboratory coat.

Respiratory protection: Under normal and intended conditions of use not required. In case of fire, wear self-contained breathing apparatus.

Acetic anhydride and triethylamine: Government approved respirator.

Protection of hands: Wear non-permeable rubber, neoprene, latex or nitrile disposable gloves. Change gloves when they become contaminated.

Acetic anhydride and triethylamine: Compatible chemical resistant gloves.

Skin protection: Wash hands after working with substance.

Eye protection: Wear safety glasses or goggles when splash hazard exists.

Acetic anhydride and triethylamine: Chemical safety goggles.

Hygienic measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Keep away from food and drink. Wash contaminated clothing before reuse.

Special protective measures: **Acetic anhydride and triethylamine:** Faceshield.

Additional information: Avoid contact with skin and/or mouth. Avoid absorption through non-protected wound. Avoid splashing or aerosol formation. Use all reagents in accordance with the relevant package insert.

9. Physical and chemical properties:

Component No.	1,2,3,4	5	6	7	8
Physical state	solid	liquid	liquid	liquid	liquid
Colour	white	clear	blue-green	clear	clear
Odour	odourless	odourless	odourless	pungent acrid	ammonia-like
pH	N/A	5.5 - 6.5	6.5 – 7.5	N/A	12.7 (100g/l)
Solubility in water	N/A	complete	complete	slightly	slightly
Melting point	N/A	0 °C	0 °C	-73 °C	-115 °C
Boiling point	N/A	100 °C	100 °C	138-140 °C	88.8 °C
Flammability	N/A	N/A	N/A	N/A	N/A
Auto flammability	Will not occur	Will not occur	Will not occur	Will not occur	Will not occur
Vapour pressure	N/A	N/A	N/A	4 mmHg (20 °C)	52mmHg (20 °C)
Relative Density	N/A	N/A	1-2	1-2	0.5-1

10. Stability and reactivity:

Reactivity:	No hazardous reactions when used appropriately.
Stability:	The reagents in the kit are stable under the storage conditions described in the package insert.
Materials to avoid:	Avoid contact with acids, bases, oxidizing agents, reducing agents, explosive, heavy metals and metallic salts (explosive metal azide complex, when azide built up occur). Acetic anhydride: Alcohols and materials mentioned above.
Hazardous decomposition products:	None known. Acetic anhydride: Carbon monoxide, carbon dioxide. Triethylamine: Carbon monoxide, carbon dioxide and nitrogen oxides.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	None known.

11. Toxicological information:

Signs and symptoms of exposure:	The chemical, physical, and toxicological properties have not been thoroughly investigated. Acetic anhydride and triethylamine: Materials are extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.
Route of exposure:	
Skin contact:	May cause skin irritation. Acetic anhydride and triethylamine: Causes burns.
Skin absorption:	Danger of skin absorption, may be harmful if absorbed through the skin.
Eye contact:	May cause eye irritation. Acetic anhydride and triethylamine: Causes burns.
Inhalation:	May be harmful if inhaled. May cause irritations of mucous membranes and upper respiratory tract. Acetic anhydride and triethylamine: May be harmful if inhaled. Materials are extremely destructive to the tissue of mucous the membranes and upper respiratory tract.
Ingestion:	Harmful if swallowed. May cause irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Additional information:	This product contains radionuclide, a chemical known to cause cancer and reproductive harm.

12. Ecological information:

Ecotoxicological effects: Sodium azide is toxic for aquatic organisms.
Radioactivity: Dispose of following local regulations and guidelines.

13. Disposal considerations:

Product / packaging: Contact appropriate local authorities, approved waste disposal companies who will advise you on how to dispose of special waste.
If drain disposed, dilute and flush with copious amount of running water to prevent azide build-up.

14. Transport information:

Land transport ADR/RID:

ADR/RID class: 7
UN. -Number: 2910
Packaging group: II
Hazard label: 7
Description of goods: 2910 Radioactive material excepted package limited quantity of materials

Sea transport IMDG:

IMDG class: 7
UN Number: 2910
Label: 7
Packaging group: II
Marine pollutant: No
Proper shipping name: 2910 Radioactive material excepted package limited quantity of materials

Air transport ICAO/IATA:

ICAO/IATA class: 7
UN/ID Number: 2910
Label: 7
Packaging group: II
Proper shipping name: 2910 Radioactive material excepted package limited quantity of materials

15. Regulatory information:

Labelling according to EU guidelines: The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

Assay buffer concentrate and separating second antibody reagent:

Code letter and hazard designation of product: Xn Harmful
Hazard-determining components of labelling: NaN₃
R-phrases: 22-52/53 Harmful if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S phrases: 2-13-28-61 Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. After contact with skin, wash immediately with plenty of water. Avoid release to the environment. Refer to special instructions/safety data sheets.

Acetic anhydride:

Annex I Index number: 607-008-00-9
Code letter and hazard designation of product: C Corrosive
Hazard-determining components of labelling: Acetic anhydride
R-phrases: 10-20/22-34 Flammable. Harmful by inhalation and if swallowed. Causes burns.
S phrases: 26-36/37/39-45 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Triethylamine:

Annex I Index number: 612-004-00-5
Code letter and hazard designation of product: F C Highly Flammable. Corrosive.
Hazard-determining components of labelling: Triethylamine
R-phrases: 11-20/21/22-35 Flammable. Harmful by inhalation and if swallowed. Causes burns.
S phrases: 3-16-26-29-36/37/39-45 Keep in a cool place. Keep away from sources of ignition – no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Other information: Radioactive material in accordance with “A.R. of 28/02/1963 art. 31” and following, relating to the protection of the population and workers against the danger of ionising radiations.

16. Other information:

All animal products and derivatives are collected in healthy animals without any disease.

The BSA (Bovine Serum Albumin) originates from countries where BSE (Bovine Spongiform Encephalopathy) as not been reported.

The information herein is believed to be correct as of the date hereof but is provided without warranty of any kind. The recipient of our products is responsible for observing any laws and guidelines.

For in vitro research use only.

This radioactive product can be transferred to and used only by authorised persons; purchase, storage, use and exchange of radioactive products are subject to the legislation of the enduser's country.

In no case the product must be administered to humans or animals.

Do not smoke, drink, eat or apply cosmetics in the working area.

Do not pipette by mouth.

Use protective clothing and disposable gloves.

All radioactive handling should be executed in a designated area, away from regular passage.

A logbook for receipt and storage of radioactive materials must be kept in the lab.

Laboratory equipment and glassware, which could be contaminated with radioactive substances, should be segregated to prevent cross contamination of different radioisotopes.

Any radioactive spills must be cleaned immediately in accordance with the radiosafety procedures.

The radioactive waste must be disposed of following the local regulations and guidelines of the notified bodies holding jurisdiction over the laboratory.

Adherence to the basic rules of the radiation safety provides adequate protection.