

Product Name: StemXVivo Cardiomyocyte Differentiation Kit

Reviewed on: 28 October 2016

### 1. Identification of Substance:

- **Other means of identification: Catalog Number:** SC032B
- **Components:** Stem Cell Qualified RGF BME Pathclear, Base Media Supplement I (contains Human Transferrin and Sodium selenite), Base Media Supplement II (contains Human Transferrin and Sodium selenite), Differentiation Cocktails I, II and III, Anti-human Cardiac Troponin T.
- **GHS product identifier:** StemXVivo Cardiomyocyte Differentiation Kit
- **Application of the substance / the preparation:** N/A
- **Manufacturer/Supplier:**  
Bio-Techne - R&D Systems Inc.  
614 McKinley Place N.E.  
Minneapolis, MN 55413 USA  
1-800-343-7475
- **For product related questions call:** 1-800-343-7475. In Europe call: +44(0)1235-529449.
- **Emergency information:** In case of a chemical emergency, spill, fire, or exposure, call R&D Systems at (612) 379-2956 or (800)-343-7475. In Europe call +44(0)1235-529449.

### 2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/EU-GHS]:** Sodium Selenite
- **GHS Classification:** Acute toxicity, Oral (Category 2)  
Acute toxicity, Inhalation (Category 3)
- **Signal Word:** DANGER
- **Hazard Statements:** H300: Fatal if swallowed; H331: Toxic if inhaled.
- **Precautionary Statements:** P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P261: Avoid breathing dust/fumes/gas/mist/vapors/spray. P271: Use only outdoors or in a well-ventilated area.
- **Responses:**  
IF SWALLOWED: Immediately call a Poison Center or physician. Specific treatment in this SDS. Rinse mouth.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison control center or physician. See specific treatments in this SDS.
- **Classification according to EU Directives 67/548/EEC or 1999/45/EC:** T+: Very toxic. N: Dangerous for the environment.
- **R Phrases:** R28: Very toxic if swallowed. R23: Toxic by inhalation. R31: Contact with acids liberates toxic gas. R43: May cause sensitization by skin contact. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **S Phrases:** S1/2: Keep locked up and out of reach of children. S28: After contact with skin, wash immediately with plenty of soap and water. S36/37 Wear suitable protective clothing and gloves. S45: In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). S61: Avoid release to the environment. Refer to special instructions/Safety data sheets
- **Special Hazards: EUH031:** Contact with acids liberates toxic gas.



### 3. Information on Ingredients:

**Description:** Sodium selenite Formula: Na<sub>2</sub>O<sub>3</sub>Se Molecular Weight: 172.94 g/mol

Contains	CAS No.	EC-No.	Index-No.	Content
Sodium selenite	10102-18-8	233-267-9	034-003-00-3	< 0.001%

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### 4. First Aid Measures:

- **After Inhalation:** If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
- **After Skin Contact:** Wash off with soap and plenty of water. Take victim immediately to a hospital. Consult a physician.
- **After Eye Contact:** Flush eyes with water as a precaution.
- **After Swallowing:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- **Most important symptoms and effects, both acute and delayed:** Acute: Abdominal cramps. Vomiting. Cough, dizziness, Headache. Delayed: contact with skin may cause dermatitis.
- **Indication of any immediate medical attention and special treatment needed:** Consult a physician.

### 5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Water spray, foam, carbon dioxide, dry sand, special powder.
- **Special hazards arising from the substance or mixture:** Hazardous decomposition products formed under fire conditions – Sodium oxides, Selenium/Selenium oxides.
- **Special protective actions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire.

### 6. Accidental Release Measures:

- **Personal precautions, protective equipment and emergency procedures:** Wear respiratory protection. Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
- **Environmental precautions:** Keep away from drains. **Discharge into environment must be avoided.**
- **Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable closed containers for disposal.

### 7. Handling and Storage:

- **Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid inhalation of vapour or mist. Provide appropriate exhaust ventilation at places where dust is formed.
- **Conditions for safe storage, including incompatibilities:** Store locked up. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not allow to come in contact with acids.

### 8. Exposure Controls and Personal Protection:

- **Control parameters:**  
**Component: Sodium Selenite (CAS# 10102-18-8): USA Occupational Exposure Limits (OSHA):** TWA – 0.2 mg/m<sup>3</sup>  
**UK EH40 WEL – Workplace Exposure Limits:** TWA – 0.1 mg/m<sup>3</sup>
- **Appropriate engineering controls:** Use with adequate ventilation including local extraction. Ensure that eyewash stations and safety showers are close to the workstation location.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.  
**Eye/face 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/hand protection:** Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching

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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.

**Body protection:** 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.

**Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

**Respiratory protection:** In case of inadequate ventilation, use a suitable respirator. 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).

## 9. Physical and Chemical Properties:

- **Appearance:** Liquid
- **Odor:** Odorless
- **Odor threshold:** Not available
- **pH:** Not available
- **Melting point/freezing point:** Not available
- **Boiling point/Boiling range:** Not available
- **Flash point:** Not available
- **Evaporation rate:** Not available
- **Flammability (solid, gas):** Not available
- **Upper/lower flammability or explosive limits:** Not available
- **Vapor density:** Not available
- **Vapor pressure:** Not available
- **Relative density:** Not available
- **Solubility in/Miscibility with Water:** Soluble
- **Partition coefficient: octanol/water:** Not available
- **Auto igniting:** Not available
- **Decomposition temperature:** Not available
- **Viscosity:** Not available

## 10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical stability:** Stable under recommended storage conditions.
- **Possibility of hazardous reactions:** No data available
- **Conditions to avoid:** No data available
- **Incompatible materials:** Strong acids
- **Hazardous decomposition products:** Products formed under fire conditions: Sodium oxides, Selenium/selenium oxides.

## 11. Toxicological Information:

- **Acute toxicity: Oral LD50:** LD50 Oral – mouse – 7.08 mg/kg, LD50 Oral – rabbit – 2.25 mg/.
- **Inhalation LC50 and Dermal LD50** – No data available.
- **Skin corrosion/irritation:** Skin rashes.
- **Serious eye damage/irritation:** Severe eye irritation may occur with exposure to selenium dust.
- **Respiratory or skin sensitization:** Upper respiratory irritation.
- **Germ cell mutagenicity:** Laboratory experiments have shown mutagenic effects.
- **Carcinogenicity:** No data available.
- **Reproductive toxicity:** No data available.
- **Specific target organ toxicity (STOT) -single exposure:** No data available.
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available.
- **Aspiration hazard:** No data available
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Potential Health Effects:** Inhalation: Toxic if inhaled. May cause respiratory tract irritation.  
Ingestion: May be fatal if swallowed.  
Skin: May be harmful if absorbed through skin. May cause skin irritation.  
Eyes: May cause eye irritation.

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- **Symptoms related to the physical, chemical and toxicological characteristics:**
  - Inhalation: Toxic if inhaled. May cause respiratory tract irritation.
  - Ingestion: May be fatal if swallowed.
  - Skin: May be harmful if absorbed through skin. May cause skin irritation.
  - Eyes: May cause eye irritation.

**Signs and Symptoms of Exposure:** Salivation, Tremors, Alopecia, Vomiting, Dermatitis

**Delayed and immediate effects and also chronic effects from short and long term exposure:**

**Short term exposure: Potential immediate effects:** facial flushing, light headedness, muscle tenderness, tremors. Upper GI irritation. Eye irritation. **Potential delayed effects:** Nausea, vomiting, upper GI irritation, skin rash.

**Long term exposure: Potential immediate effects:** Not available. **Potential delayed effects:** Not available.

- **Effects of chronic exposure:** marked hepatic necrosis in laboratory experiments.
- **Numerical measures of toxicity:** Not available
- **Other Information:** RTECS: VS7350000

## 12. Ecological Information:

- **Ecotoxicity:** Toxicity to fish: LC50 – *Oncorhynchus mykiss* (rainbow trout) – 2.75 mg/L – 96.0 hr.  
Mortality NOEC – *Daphnia magna* (Water flea) – 0.24 mg/L – 21 hr.
- **Biodegradability and Persistence:** No data available.
- **Bioaccumulative potential:** may occur along the food chain in plants and fish.
- **Mobility in soil:** No data available.
  - **Other adverse effects:** Toxic to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

## 13. Disposal Considerations:

- **Disposal methods:** 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 solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of waste in accordance to applicable national, regional, or local regulations.
- **Contaminated packaging:** Dispose in the same manner as unused product.
- **Special precautions:** no data available

## 14. Transportation Information:

- UN Number:** None  
**DOT regulations:** · **Hazard class:** None  
**Land transport ADR/RID (cross-border):** Not regulated.  
**Maritime transport IMDG:** Not regulated.  
**Marine pollutant:** No  
**Air transport ICAO-TI and IATA-DGR:** Not regulated.  
• **Transport/Additional information:** Not dangerous according to the above specifications.

## 15. Regulations:

- **US. Toxic Substances Control Act:** On TSCA inventory  
**SARA 313 Components:** Sodium Selenite is listed  
**SARA 311/312 Hazards:** Acute Health Hazard

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CERCLA Reportable Quantity: 100 lbs.  
California Prop. 65: Not listed.

## 16. Other Information:

- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

## 2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]:** Transferrin (from human serum/plasma)
- **Hazard Symbol:** none
- **Signal Word:** none
- **Hazard Statement(s):** None
- **Precautionary Statement(s):** None
- **Response:**
  - **Special Hazards:** Potential risk of infection. Product has been donor screened for some infections agents, however as human sourced material testing cannot be guaranteed to detect all infectious agents. Treat as potentially infectious.
  - **Routes of exposure:** Inhalation; ingestion or skin.
- IF EXPOSED OR CONCERNED: Get medical advice/attention.
- **Classification according to Directive 67/548/EEC:** None
- **R-phrases:** None
- **S-phrases:** None
- **Other Hazards:** None

## 3. Information on Ingredients:

Description:

Contains	EINECS	CAS No.	Content %
Human Transferrin	NA	11096-37-0	< 0.1%

## 4. First Aid Measures:

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly. May be irritating to skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Rinse mouth with water. Immediately seek medical attention and appropriate follow-up.

## 5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Any means suitable for extinguishing the surrounding area.
- **Specific hazards arising from the chemical:** Dangerous decomposition is not anticipated.
- **Protective equipment:** Wear appropriate protective clothing and a self-contained breathing apparatus if necessary.

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### 6. Accidental Release Measures:

- **Person-related safety precautions:** Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
- **Measures for environmental protection:** Prevent further spillage or leakage if safe to do so.
- **Measures for containment and cleaning:** Absorb liquid components with inert liquid-binding material. Pick up mechanically. Dispose contaminated material as waste according to item 13.

### 7. Handling and Storage:

- **Precautions for safe handling:** Treat as a potential biohazard. Store away from all foodstuffs. For laboratory use only.
- **Information about protection against explosions and fires:** Normal measures for preventive fire protection.
- **Conditions for safe storage:** Store in a cool place. Keep container tightly closed in a dry and well ventilated place.

### 8. Exposure Controls and Personal Protection:

- **Components:** UK. EH40 WEL- Workplace Exposure Limits: Value: Unknown
- **Appropriate engineering controls:** Follow usual standard laboratory practices. The following personal protection is recommended:
  - Respiratory Protection:** Respiratory Protection not required. For nuisance exposures use respirators and components approved under appropriate government standards.
  - Hand Protection:** Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.
  - Eye Protection:** Use equipment for eye protection tested and approved under appropriate government standards.
  - Skin and Body Protection:** Use impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
  - Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

### 9. Physical and Chemical Properties:

- **Appearance:** Liquid
- **Odor:** Little to none
- **Odor threshold:** Not available
- **pH:** Not available
- **Melting point/freezing point:** Not available
- **Boiling point/Boiling range:** Not available
- **Flash point:** Not available
- **Evaporation rate:** Undetermined
- **Flammability (solid, gas):** Not available
- **Upper/lower flammability or explosive limits:** Not available
- **Vapor density:** Not available
- **Vapor pressure:** Not available
- **Relative density:** Not available
- **Solubility in/Miscibility with Water:** Not Available
- **Partition coefficient: octanol/water:** Not available
- **Auto igniting:** Product is not self igniting
- **Decomposition temperature:** Not available
- **Viscosity:** Not available

### 10. Stability and Reactivity:

- **Reactivity:** Not reactive
- **Chemical Stability:** Stable under normal ambient and storage and handling temperatures.

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- **Thermal:** Decomposition/conditions to be avoided: No decomposition if used according to specifications.
- **Incompatible materials to be avoided:** Unknown
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11. Toxicological Information:

- **Acute toxicity:** May irritate eyes.
- **Chronic Toxicity:** Potential risk of infection. Product has been donor screened for some infectious agents, however as human sourced material testing cannot be guaranteed to detect all infectious agents. Treat as potentially infectious.
- **Routes of exposure:** Inhalation; ingestion or skin.
- **Skin corrosion / irritation:** May be harmful if absorbed through the skin. May cause skin irritation.
- **Serious eye damage / irritation:** May cause eye irritation.
- **Respiratory or skin sensitization:** No sensitizing effects known.
- **Germ cell mutagenicity:** No effect known.
- **Carcinogenicity:** No effect known.
- **Reproductive toxicity:** No toxic effect known.
- **STOT-single exposure:** Data not available
- **STOT-repeated exposure:** Data not available.
- **Aspiration hazard:** May be harmful if inhaled.
- **Additional Information:** RTECS: Not available

### 12. Ecological Information:

- **Ecotoxicity:** No data available.
- **Persistence and degradability:** No data available.
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** No data available.

### 13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations for infectious materials.
- **Contaminated packaging:** Dispose in the same manner as unused product.
- **Special precautions:** Dispose of small amounts of spilled material as potentially infectious material by autoclaving or incineration. Large spills must be dealt with separately by qualified disposal personnel.

### 14. Transportation Information:

- **UN Number:** None
- **DOT regulations:** · **Hazard class:** None
- **Land transport ADR/RID (cross-border):** Not regulated.
- **Maritime transport IMDG:** Not regulated.
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- **Transport/Additional information:** Not dangerous according to the above specifications.

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### 15. Regulations:

- **US Federal and State Regulations**
  - TSCA (Toxic Substances Control Act): Not listed.
  - SARA 313: Not listed.
  - SARA 311/312 Hazards: Not listed
  - CERCLA Reportable Quantity: NA
  - California Proposition 65: Not listed.

### 16. Other Information:

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