Material Safety Data Sheet
Revision Date: 03-Feb-2012

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code
HUXUB-01001
Product name
Human Umbilical Cord Blood Mesenchymal Stem Cells

Company/Undertaking Identification

Cyagen Biosciences Inc.
574 East Weddell Dr, Suite 6
Sunnyvale, CA 94089, U.S.A.
Tel: 800-921-8931

For research use only

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous/Non-hazardous Components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethylsulfoxide</td>
<td>67-68-5</td>
<td>10</td>
</tr>
</tbody>
</table>

The product contains no substances which at their given concentration, are considered to be hazardous to health.

3. HAZARDS IDENTIFICATION

Emergency Overview
Components of the product may be absorbed into the body through the skin

Form
Liquid
3. HAZARDS IDENTIFICATION

Principle Routes of Exposure/

<table>
<thead>
<tr>
<th>Potential Health effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>Inhalation</td>
</tr>
<tr>
<td>Ingestion</td>
</tr>
</tbody>
</table>

Specific effects

| Carcinogenic effects    | No information available |
| Mutagenic effects       | No information available |
| Reproductive toxicity   | No information available |
| Sensitization           | No information available |

Target Organ Effects

| No information available |

HMIS

<table>
<thead>
<tr>
<th>Health</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Skin contact Wash off immediately with plenty of water
Eye contact Rinse thoroughly with plenty of water, also under the eyelids.
Ingestion Never give anything by mouth to an unconscious person
Inhalation Move to fresh air

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Dry chemical
Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Use personal protective equipment
Methods for cleaning up Soak up with inert absorbent material

7. HANDLING AND STORAGE

Handling No special handling advice required
Storage Keep in properly labelled containers

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL (TWA)</th>
<th>OSHA PEL (Ceiling)</th>
<th>ACGIH OEL (TWA)</th>
<th>ACGIH OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethylsulfoxide</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Engineering measures Ensure adequate ventilation, especially in confined areas
Personal protective equipment

Respiratory protection  In case of insufficient ventilation wear suitable respiratory equipment
Hand protection  Impervious butyl rubber gloves. Nitrile gloves are not recommended. Some brands of Nitrile gloves have breakthrough times of five minutes.
Eye protection  Safety glasses with side-shields
Skin and body protection  Light weight protective clothing.
Hygiene measures  Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls  Prevent product from entering drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information
Form  Liquid

Important Health Safety and Environmental Information

<table>
<thead>
<tr>
<th>Property</th>
<th>°C</th>
<th>°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point/range</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability  Stable
Materials to avoid  No information available
Hazardous decomposition products  No information available
Polymerization  Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral, rat/mouse)</th>
<th>LD50 (dermal, rat/rab bit)</th>
<th>LD50 (inhalation, rat/mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethylsulfoxide</td>
<td>14500 mg/kg (Rat)</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Principle Routes of Exposure/
Potential Health effects

Eye  Mild eye irritation.
Skin  moderate skin irritation. Components of the product may be absorbed into the body through the skin.
Inhalation  No information available
Ingestion  May be harmful if swallowed.
Specific effects

Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Orcia Effects: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity effects: No information available.
Mobility: No information available.
Biodegradation: Inherently biodegradable.
Bioaccumulation: Does not bioaccumulate

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations

14. TRANSPORT INFORMATION

IATA
Proper shipping name: Not classified as dangerous in the meaning of transport regulations
Hazard Class: No information available
Subsidiary Class: No information available
Packing group: No information available
UN-No: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>PICCS</th>
<th>ENCS</th>
<th>DSL</th>
<th>NDSL</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethylsulfoxide</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
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<td>-</td>
<td>Listed</td>
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U.S. Federal Regulations

SARA 313
This product is not regulated by SARA.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain HAPs.

U.S. State Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Massachusetts-RTK</th>
<th>New Jersey - RTK</th>
<th>Pennsylvania - RTK</th>
<th>Illinois - RTK</th>
<th>Rhode Island - RTK</th>
</tr>
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<tbody>
<tr>
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California Proposition 65
This product does not contain chemicals listed under Proposition 65

WHMIS hazard class:
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

### 16. OTHER INFORMATION

This material is sold for research and development purposes only. It is not for any human or animal therapeutic or clinical diagnostic use. It is not intended for food, drug, household, agricultural, or cosmetic use. An individual technically qualified to handle potentially hazardous chemicals must supervise the use of this material.

The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may be present unknown hazards and should be used with caution. Since Cyagen Biosciences Inc. cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein.

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End of Safety Data Sheet