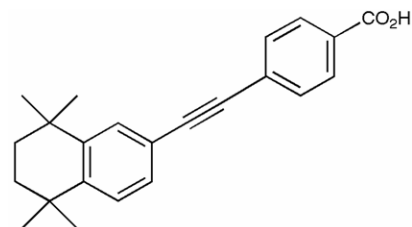


1. IDENTIFICATION

1.1. Product Name ec23



1.2. Catalog Number SRP001, SRP002 and SRP003

1.3. Uses and restrictions Preliminary evidence indicates that Synthetic Retinoid ec23 modulates cell differentiation through retinoid signalling pathways including activation of retinoic binding proteins For *in vitro* R&D use only, not for diagnostic applications, not for drug or household use.

1.4. Manufacturer/Supplier
 Reinnervate Ltd
 NetPark Incubator
 Thomas Wright Way
 Sedgefield
 Co. Durham, TS21 3FD
 United Kingdom
 Telephone: +44 (0) 1740 625 266
 E-mail: techsupport@reinnervate.com
 Web: <http://www.reinnervate.com>

1.5. In Case of Emergency

- For medical emergencies, contact your local emergency center.
- For transportation emergencies, contact your local transportation authorities.
- For other non-medical or environmental emergencies please call, +44 (0) 1740 625 266, 9:00 am-5:00 pm GMT, Monday – Friday.

2. HAZARDS IDENTIFICATION

2.1. Classification According to Regulation (EC) No 1272/2008
 Reproductive Toxicity (Category 1B)
 Health Hazard

2.2. Signal Word Health Hazard

2.3. Symbol



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 Beltsville, MD 20705 USA



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2.4. Hazard Statement(s)	H302 – Harmful if swallowed. H315 – Causes skin irritation. H360 – May damage fertility or the unborn child. H400 – Very toxic to aquatic life. H410 – Very toxic to aquatic life with long lasting effect.
2.5. Precautionary Statement(s)	P201 – Obtain special instructions before use. P202 – Do not handle until all safety precautions have been read and understood. P264 – Wash hands thoroughly after handling. P273 – Avoid release to the environment. P281 – Use personal protective equipment as required. P301+312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+352 – IF ON SKIN: Wash with plenty of soap and water P308+P313 – If exposed or concerned: Get medical advice / attention. P330 – Rinse mouth P332+313 – If skin irritation occurs, get medical advice/attention. P405 – Store locked up. P501 – Dispose of contents / container as hazardous waste.
2.6. Hazards not otherwise classified (HNOC) or not covered by GHS	None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Chemical Name	ec23
3.2. Synonyms	4-(5,5,8,8-Tetramethyl-5,6,7,8-tetrahydronaphthalen-2-ylethynyl) benzoic acid
3.3. Chemical Formula	C ₂₃ H ₂₄ O ₂
3.4. Molecular Weight	332
3.5. CAS Number	104561-41-3

4. FIRST AID MEASURES

4.1 First Aid Instructions	
• General Advice	Call a physician.
• Eyes	Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.
• Skin	Immediately flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing & shoes. Call a physician.
• Ingestion	Wash out mouth with water. Do not induce vomiting. Call a physician.
• Inhalation	Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
• Puncture Wounds	Call a physician.
4.2 Most Important Symptoms/effects, acute and immediate	Toxicological properties have not been thoroughly investigated.

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- 4.3 Indications of immediate medical attention and special treatment needed No data available.

5. FIRE FIGHTING MEASURES

- 5.1. Suitable extinguishing media. Use alcohol-resistant foam, carbon dioxide, water or dry chemical spray.
- 5.2. Specific hazards arising from the chemical Possible emission of toxic fumes under fire conditions.
Flash point: no data available.
Explosive limits: no data available.
Hazardous combustion products: no data available.
- 5.3. Special protective equipment and precautions for fire-fighters Wear self-contained breathing apparatus & protective clothing to prevent contact with skin, eyes & respiratory system.

6. ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment, and emergency procedures Evacuate area.
Avoid raising and breathing dust, and provide adequate ventilation.
Wear self-contained breathing apparatus or respirator, rubber boots & heavy rubber gloves.
- 6.2 Environmental Precautions Avoid releasing to the environment.
- 6.3 Methods and materials for containment and clean up Gather solid material, place in a bag & hold for waste disposal. Avoid raising dust. Ventilate area & wash spill site with copious amounts of water after material pickup is complete.

7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling Directions for safe handling: Do not breathe dust. Avoid contact with eyes, skin & respiratory system. Avoid prolonged or repeated exposure. Due to potential for harm to the unborn child, particular care should be taken by women of child-bearing age.
- 7.2 Conditions for safe storage, including any incompatibilities Conditions of storage: Keep tightly closed when not in use. Store at or below room temperature (20°C). Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1. Control Parameters Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2. Appropriate engineering controls Safety shower and eye bath. Mechanical exhaust ventilation should be used where possible.
- 8.3. Protection measures and Personal Protective Equipment Facilities storing or utilizing this material should be equipped with eyewash and a safety shower.
Handle in accordance with good industrial hygiene and safety practices.
Wash hands thoroughly after handling.

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- Respiratory Protection Respiratory protection: Use respirators & components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate, use a dust mask type N95 (US) or type P1 (EN 143) respirator.
- Eye Protection Chemical safety goggles.
- Skin Protection Compatible chemical-resistant gloves.

9. PHYSICAL/CHEMICAL PROPERTIES

- | | |
|--|-----------------------|
| 9.1. Appearance | Crystalline solid. |
| 9.2. Odor | No data available. |
| 9.3. Odor Threshold | No data available. |
| 9.4. pH | No data available. |
| 9.5. Melting point/freezing point | 256-260°C. |
| 9.6. Initial boiling point and boiling range | No data available. |
| 9.7. Flash point | No data available. |
| 9.8. Evaporation rate | No data available. |
| 9.9. Flammability (solid, gas); | No data available. |
| 9.10. Upper/lower flammability or explosive limits | No data available. |
| 9.11. Vapor pressure | No data available. |
| 9.12. Vapor density | No data available. |
| 9.13. Relative density | No data available. |
| 9.14. Solubility(ies) | Low water solubility. |
| 9.15. Partition coefficient: n-octanol/water | No data available. |
| 9.16. Auto-ignition temperature | No data available. |
| 9.17. Decomposition temperature | No data available. |
| 9.18. Viscosity | No data available. |
| 9.19. Explosive properties | No data available. |
| 9.20. Oxidizing properties | No data available. |

10. STABILITY/REACTIVITY

- | | |
|--|---|
| 10.1. Reactivity | No data available. |
| 10.2. Chemical Stability | This product is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | Possible emission of toxic fumes under fire conditions. |
| 10.4. Conditions to Avoid | Avoid contact with strong bases. |
| 10.5. Incompatible materials | Strong oxidizing agents. |
| 10.6. Hazardous decomposition products | Carbon dioxide.
Carbon monoxide. |

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11. TOXICOLOGICAL INFORMATION

11.1. Toxicological effects	The toxicological effects of this product have not been thoroughly studied.
• Acute toxicity	No data available.
• Skin corrosion/irritation	Can cause skin irritation. May be toxic if absorbed through the skin.
• Serious eye damage/eye irritation	May cause eye irritation.
• Respiratory or skin sensitization	No data available.
• Germ cell mutagenicity	No data available.
• Carcinogenicity	No data available.
• Reproductive Toxicity	CHRONIC EXPOSURE - TERATOGEN Result: Evidence suggests that 4-(5,5,8,8-Tetramethyl-5,6,7,8-tetrahydronaphthalen-2-ylethynyl) benzoic acid behaves as a synthetic derivative of all-trans-retinoic acid (ATRA), or Vitamin A, a vitamin essential to human nutrition & involved in many metabolic processes in mammals. Scientific studies on ATRA indicate dermal application of a 5 ppm medical ointment of all-trans-retinoic acid for prolonged time periods during pregnancy may cause foetal teratogenicity & this compound is expected to be at least as active. Unlike ATRA, this synthetic compound is not unstable under exposures in laboratory environments & hence, its biological activity is not expected to diminish over time.
• Specific target organ toxicity – single exposure	No data available.
• Specific target organ toxicity – repeated exposure	No data available.
• Aspiration hazard	No data available.
11.2. Symptoms related to the physical, chemical and toxicological characteristics	No data available.
11.3. Effects of Short-Term Exposure	No data available.
11.4. Effects of Long-Term Exposure	No data available.
11.5. Numerical measures of toxicity	No data available.
11.6. Other Information	None.

12. ECOLOGICAL INFORMATION

12.1. Toxicity	No data available.
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12.2. Persistence and degradability	Not known; potentially non-biodegradable. Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
12.3. Bioaccumulative potential	No data available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	No data available.
12.6. Other adverse effects	No data available.

13. DISPOSAL CONSIDERATIONS

13.1. Disposal Method	Contact a licensed professional waste disposal service to dispose of this material. Must be disposed of as Hazardous Waste. Dissolve or mix the material with a combustible solvent & burn in a chemical incinerator equipped with an afterburner & scrubber. Observe all federal, state & local environmental regulations.
13.2. Personal safety	Refer to section 8.

14. TRANSPORT INFORMATION

RID/ADR Not regulated for road transport.
IMDG Not regulated for sea transport.
IATA Not regulated for air transport.

15. REGULATORY INFORMATION

U.S. Federal Regulations

- SARA 313 components No data available.
- SARA 302 components No data available.
- SARA 311/312 Hazards No data available.
- Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see CFR 61) No data available.

U.S. State Regulations

- California Proposition 65 No data available.
- Massachusetts Right To Know Components No data available.
- Pennsylvania Right To Know Components No data available.
- New Jersey Right To Know Components No data available.

WHMIS Hazard Class D3

16. OTHER INFORMATION

Notice

The above information is believed to be correct but does not purport to be all inclusive & shall be used only as a guide. The information in this document is based on the present state of our knowledge & is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Reinnervate Limited shall not be held liable for any damage resulting from handling or from contact with the above product.

DISCLAIMER: For *In vitro* R&D use only, not for diagnostic applications, not for drug or household use.

Preparation Date
Version No.

11th June, 2015
SDS-ec23-05

END OF SAFETY DATA SHEET

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