SAFETY DATA SHEET
Cat# BN01150, 5'-Nucleotidase Activity Assay Kit (Colorimetric)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 5'-Nucleotidase Activity Assay Kit (Colorimetric)

PRODUCT CODES: Cat# BN01150

MANUFACTURER: Assay Genie (brand of Reagent Genie Ltd.)

ADDRESS: G1 The Steelworks, Foley Street, Dublin 1

EMERGENCY PHONE: +353 1 8879802

SECTION 2: HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Volume</th>
<th>Safety Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'-NT Assay Buffer</td>
<td>Liquid</td>
<td>25 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>5'-NT Substrate</td>
<td>--</td>
<td>1 vial</td>
<td>No hazards</td>
</tr>
<tr>
<td>5'-NT Converter</td>
<td>--</td>
<td>1 vial</td>
<td>No hazards</td>
</tr>
<tr>
<td>5'-NT Inhibitor</td>
<td>Contains proprietary inhibitor</td>
<td>250 µl</td>
<td>See below</td>
</tr>
<tr>
<td>5'-NT Stop Solution</td>
<td>Liquid</td>
<td>500 µl</td>
<td>No hazards</td>
</tr>
<tr>
<td>5'-NT Developer I</td>
<td>Contains proprietary reagent A</td>
<td>8 ml</td>
<td>See below</td>
</tr>
<tr>
<td>5'-NT Developer II</td>
<td>Contains proprietary reagent B</td>
<td>4 ml</td>
<td>See below</td>
</tr>
<tr>
<td>NH₄⁺ Standard (100 mM)</td>
<td>Liquid</td>
<td>100 µl</td>
<td>No hazards</td>
</tr>
<tr>
<td>5'-NT Positive Control</td>
<td>--</td>
<td>1 vial</td>
<td>No hazards</td>
</tr>
</tbody>
</table>

Proprietary inhibitor:

Emergency Overview

OSHA Hazards: Target Organ Effect

Target Organs: Eyes, Skin

GHS Classification: Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram:

Signal word: Danger

Hazard statement(s): H301 + H331 Toxic if swallowed or if inhaled
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s): P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapour/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

HMIS Classification
Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
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Physical hazards: 0
NFPA Rating
Health hazard: 2
Fire: 0
Reactivity Hazard: 0

**Proprietary Reagent A:**

**Emergency Overview**

**GHS Classification:** Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400

**GHS Label elements, including precautionary statements**

Pictogram: ![](image)
Signal word: Warning
Hazard statement(s): H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

**Precautionary statement(s):**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapour/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use of this product may result in respiratory irritation.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**
Health hazard: 2
Chronic health hazard: *
Flammability: 1
Physical hazards: 0

**NFPA Rating**
Health Hazard: 2
Fire: 1
Reactivity Hazard: 0

**PROPRIETARY REAGENT B:**

**GHS Classification:** Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

**GHS Label elements, including precautionary statements**

Pictogram: ![](image)
Signal word: Danger
Hazard statement(s): H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
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Precautionary statement(s):
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 3
Chronic health hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating
Health Hazard: 3
Fire: 0
Reactivity Hazard: 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>EC-No.</th>
<th>Molecular Weight</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary inhibitor</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Proprietary Reagent A</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PROPRIETARY REAGENT B</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

Proprietary Reagent B:
Suitable extinguishing media: Dry powder.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous combustion products formed under fire conditions— Hydrogen chloride gas, Sodium oxides.
Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods for cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: -20°C
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPRIETARY REAGENT B</td>
<td>--</td>
<td>STEL</td>
<td>2.000000 mg/m³</td>
<td>USA. Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
</tbody>
</table>

Proprietary Reagent A and Proprietary inhibitor:

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. 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).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching 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.

Eye protection
Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and 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.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Proprietary Reagent A</th>
<th>PROPRIETARY REAGENT B</th>
<th>Proprietary inhibitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Clear liquid</td>
<td>Liquid</td>
<td>powder</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Other Solubility:</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C):</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
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<td>No data available</td>
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</tr>
<tr>
<td>Ignition Temperature (°C):</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Density:</td>
<td>No data available</td>
<td>No data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Proprietary inhibitor</th>
<th>Proprietary Reagent A</th>
<th>PROPRIETARY REAGENT B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability:</td>
<td>Stable under recommended storage conditions</td>
<td>Stable under recommended storage conditions</td>
<td>No data available</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>no data available</td>
<td>no data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizing agents, Strong bases</td>
<td>Strong oxidizing agents, Strong bases</td>
<td>Strong acids, Organic materials, Powdered metals, Forms shock-sensitive mixtures with certain other materials., Amines, Reacts violently with ammonium salts, aziridine, methanol, and phenylacetonitrile.</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>no data available</td>
<td>no data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

Proprietary inhibitor:

Acute toxicity
LD50 Oral - Rat - 186 mg/kg

Carcinogenicity
This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or
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EPA classification.
Human carcinogen.
IARC: 1 - Group 1: Carcinogenic to humans (Nickel(II) chloride)
NTP: Known to be a human carcinogen (Nickel(II) chloride)
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Presumed human reproductive toxicant
Additional Information
RTECS: no data available

Proprietary Reagent A:
Acute toxicity: LD50 Oral - rat - 2,733 mg/kg
Inhalation: no data available
LD50 Intraperitoneal - mouse - 50 mg/kg
Skin corrosion/irritation: Skin – rabbit – irritating to skin
Serious eye damage/eye irritation: Eyes – rabbit – Severe eye irritation
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity:
IARC: 2B - Group 2B: Possibly carcinogenic to humans
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): May cause respiratory irritation
Specific target organ toxicity – repeated exposure (GHS): no data available
Aspiration hazard: no data available
Signs and Symptoms of Exposure: Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic effects: no data available
Additional information: RTECS: no data available

PROPRIETARY REAGENT B:
Acute toxicity: No data available
Inhalation: No data available
Dermal: No data available
No data available
Skin corrosion/irritation: No data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: No data available
Germ cell mutagenicity: No data available
Carcinogenicity:
IARC: A4 - Not classifiable as a human carcinogen
3 - Group 3: Not classifiable as to its carcinogenicity to humans
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): no data available.
Specific target organ toxicity – repeated exposure (GHS): no data available
Signs and Symptoms of Exposure: Exposure may cause abdominal pain, nausea, headache, sneezing, and/or vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Additional information: RTECS: --

SECTION 12: ECOLOGICAL INFORMATION

Proprietary Reagent A:
Persistence and degradability: Biodegradability Result: 70.8 - 75.7 % - Readily biodegradable.
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Toxicity:
- Toxicity to fish LC50 - Danio rerio (zebra fish) - 4.5 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 2.7 mg/l - 48 h
- Toxicity to algae EC50 - Algae - 0.85 mg/l - 72 h

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

No data available

PROPRIETARY REAGENT B:
Persistence and degradability: no data available
Toxicity: No data available
Bioaccumulative potential: no data available
Mobility in soil: no data available

PBT and vPvB assessment: no data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Proprietary inhibitor
- Toxicity to fish: mortality NOEC - Oncorhynchus mykiss (rainbow trout) - 4.9 mg/l - 96.0 h
- Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 6.0 - 9.3 mg/l - 48 h
- Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 0.006 - 0.012 mg/l - 96 h

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Proprietary Reagent A:
- DOT (US): Not dangerous goods
- IMDG: UN-number: 3077, Class: 9, Packing group: II; EMS-No: F-E, S-D; Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.; Marine pollutant: Marine pollutant
- IATA: UN number: 3077 Class: 9 Packing group: III; Proper shipping name: Environmentally hazardous substance, solid, n.o.s.

Proprietary Reagent B:
- DOT (US): UN number: 1791 Class: 8 Packing group: III; Proper shipping name: Hypochlorite solutions; Reportable Quantity (RQ): 667 lbs Poison Inhalation Hazard: No
- IMDG: UN number: 1791 Class: 8 Packing group: III EMS-No: F-A, S-B; Proper shipping name: HYPOCHLORITE SOLUTION; Marine pollutant:yes
- IATA: UN number: 1791 Class: 8 Packing group: III; Proper shipping name: Hypochlorite solution

Proprietary inhibitor:
- DOT (US): UN number: 3288 Class: 6.1 Packing group: III
- Proper shipping name: Toxic solid, inorganic, n.o.s.
- Reportable Quantity (RQ): 100 lbs Poison Inhalation Hazard: No
- IMDG: UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A
- Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. Marine pollutant:yes
- IATA: UN number: 3288 Class: 6.1 Packing group: III
- Proper shipping name: Toxic solid, inorganic, n.o.s.

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313:
- Proprietary Reagent A: CAS-No. –
- Proprietary inhibitor: CAS-No. –
- SARA 311/312 Hazards: –
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Massachusetts Right To Know Components:
Proprietary inhibitor, CAS-No. --
Proprietary Reagent A, CAS-No. --
Proprietary Reagent B, CAS-No. --

Pennsylvania Right To Know Components:
Proprietary inhibitor, CAS-No. --
Proprietary Reagent A, CAS-No. --
PROPRIETARY REAGENT B, CAS-No. --

New Jersey Right To Know Components:
Proprietary inhibitor, CAS-No. --
Proprietary Reagent A, CAS-No. --
PROPRIETARY REAGENT B, CAS-No. --

California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause cancer:
Proprietary Reagent A: CAS-No. --

EU regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary inhibitor</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Proprietary Reagent A</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PROPRIETARY REAGENT B</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION

DISCLAIMER:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Assay Genie shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.