

# SAFETY DATA SHEET

Cat# BN00636, Thrombin Inhibitor Screening Kit (Fluorometric)

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Thrombin Inhibitor Screening Kit (Fluorometric)  
**PRODUCT CODES:** Cat# BN00636  
**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

| Component                | Description                  | Volume | Safety Information |
|--------------------------|------------------------------|--------|--------------------|
| Thrombin Dilution Buffer | Proprietary Buffer           | 1 ml   | No hazards         |
| Thrombin Assay Buffer    | Proprietary Buffer           | 15 ml  | No hazards         |
| Thrombin Enzyme standard | Solution (contains Thrombin) | 1 ml   | See below          |
| Thrombin Substrate       | In DMSO                      | 10 µl  | See below          |
| Inhibitor                | liquid                       | 10 ul  | No hazards         |

### DMSO:

#### Emergency Overview

**OSHA Hazards:** Combustible liquid, Target organ effect

**Target Organs:** Eyes, Skin

**GHS Classification:** Flammable liquids (Category 4)

**GHS Label elements, including precautionary statements**

**Pictogram:** none

**Signal word:** Warning

**Hazard statement(s):** H227 Combustible liquid

**Precautionary statement(s):** none

#### HMIS Classification

**Health hazard:** 0

**Chronic Health Hazard:** \*

**Flammability:** 2

**Physical hazards:** 0

#### NFPA Rating

**Health hazard:** 0

**Fire:** 2

**Reactivity Hazard:** 0

#### Potential Health Effects

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes:** May cause eye irritation.

**Ingestion:** May be harmful if swallowed.

**Aggravated Medical Condition:** Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

### Thrombin:

#### Emergency Overview

**OSHA Hazards:** respiratory sensitizer, Irritant

**Target Organs:** Lungs

**GHS Classification:** Respiratory sensitization (Category 4)

**GHS Label elements, including precautionary statements**

**Pictogram:**



**Signal word:** Warning

**Hazard statement(s):** H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.

**Precautionary statement(s):** P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.

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P280 Wear protective gloves/protective clothing.

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.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

### HMIS Classification

Health hazard: 1

Chronic health hazard: \*

Flammability: 0

Physical hazards: 0

### NFPA Rating

Health hazard: 1

Fire: 0

Reactivity Hazard: 0

### Potential Health Effects

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

**Ingestion:** May be harmful if swallowed.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS Number | EC-No.    | Molecular Weight | Chemical Formula                 |
|-----------|------------|-----------|------------------|----------------------------------|
| DMSO      | 67-68-5    | 200-664-3 | 78.13            | C <sub>2</sub> H <sub>6</sub> OS |
| Thrombin  | 9002-04-4  | 232-648-7 | --               | --                               |

## 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

### DMSO:

**Suitable extinguishing media:** For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:** Hazardous decomposition products formed under fire conditions –see section 10.

**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. Evacuate personnel to safe areas. 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. Discharge into the environment must be avoided.

**Methods for cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Flash back possible over considerable distance. Container explosion may occur under fire conditions. Use explosion-proof equipment. 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.

Recommended storage temperature: -80 °C.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### DMSO:

| Components         | CAS-No. | Value | Control parameters | Basis                                               |
|--------------------|---------|-------|--------------------|-----------------------------------------------------|
| Dimethyl sulfoxide | 67-68-5 | TWA   | 250 ppm            | USA. Workplace Environmental Exposure Levels (WEEL) |

### Thrombin:

Contain no substances with occupational exposure limit values.

#### 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

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 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

| Property                   | DMSO                | thrombin          |
|----------------------------|---------------------|-------------------|
| Appearance:                | Clear liquid        | Beige powder      |
| pH:                        | No data available   | No data available |
| Water Solubility:          | Completely miscible | No data available |
| Other Solubility:          | No data available   | No data available |
| Boiling Point (°C):        | 189 °C (372 °F)     | No data available |
| Melting Point (°C):        | 16-19 °C (61-66 °F) | No data available |
| Flash Point (°C):          | 87 °C (189 °F)      | No data available |
| Ignition Temperature (°C): | 301 °C (574 °F)     | No data available |
| Density:                   | 1.1 g/ml            | No data available |

## SECTION 10: STABILITY AND REACTIVITY

| Property                          | DMSO                                                                                              | thrombin                |
|-----------------------------------|---------------------------------------------------------------------------------------------------|-------------------------|
| Chemical stability:               | Stable under recommended storage conditions                                                       |                         |
| Conditions to avoid:              | Heat, Flames, Sparks                                                                              | No data available       |
| Materials to avoid:               | Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents | Strong oxidizing agents |
| Hazardous decomposition products: | Carbon oxides, sulfur oxides                                                                      | No data available       |

## SECTION 11: TOXICOLOGICAL INFORMATION

### DMSO:

Acute toxicity: LD50 Oral – rat – 14,500 mg/kg

LC50 Inhalation – rat – 4 h – 40250 ppm

LD50 Dermal – rabbit – >5,000 mg/kg

Skin corrosion/irritation: Skin – rabbit – no skin irritation – 4h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation

Respiratory or skin sensitization: no data available

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**Germ cell mutagenicity:** Genotoxicity in vitro – mouse – lymphocyte: Cytogenetic analysis

Genotoxicity in vitro – mouse – lymphocyte: Mutation in mammalian somatic cells

Genotoxicity in vivo – rat – Intraperitoneal: Cytogenetic analysis

Genotoxicity in vivo – mouse – Intraperitoneal: DNA damage

**Carcinogenicity:** Carcinogenicity – rat – Oral □ Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Skin and appendages: other: tumors.

Carcinogenicity – mouse – Oral □ Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Leukemia skin and appendages: other: tumors.

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- 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:** Reproductive toxicity – rat – Intraperitoneal □ Effects on fertility: abortion

Reproductive toxicity – rat – Intraperitoneal □ Effects on fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

Reproductive toxicity – rat – Subcutaneous □ Effects on fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants). Effects on fertility: litter size (e.g. # fetuses per litter; measured before birth)

Reproductive toxicity – mouse – Oral □ Effects on fertility: post-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system.

**Teratogenicity:** Developmental toxicity – mouse – Intraperitoneal: Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus).

Specific developmental abnormalities: musculoskeletal system

**Specific target organ toxicity – single exposure (GHS):** no data available

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Aspiration hazard:** no data available

### Potential Health Effects

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes:** May cause eye irritation.

**Ingestion:** May be harmful if swallowed.

**Aggravated Medical Condition:** Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

**Signs and Symptoms of Exposure:** Effects due to ingestion may include: nausea, fatigue, and/or headache.

**Additional information:** RTECS: PV6210000

### Thrombin:

**Acute toxicity:** no data available

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

**Respiratory or skin sensitization:** May cause allergic respiratory and skin reactions.

**Germ cell mutagenicity:** no data available

### **Carcinogenicity:**

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- 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):** Inhalation – may cause respiratory irritation.

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Aspiration hazard:** no data available

### Potential Health Effects

**Inhalation:** May be harmful if inhaled.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

**Ingestion:** May be harmful if swallowed.

**Signs and Symptoms of Exposure:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional information:** RTECS: XO8950000

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## SECTION 12: ECOLOGICAL INFORMATION

### DMSO:

**Elimination information (persistence and degradability):** no data available

**Ecotoxicity effects:** Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h; LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia pulex (Water flea) - 27,500 mg/l

Toxicity to algae: EC50 - Lepomis macrochirus (Bluegill) - > 400,000 mg/l - 96 h

**Further information on ecology:** no data available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Product:** Observe all federal, state, and local environmental regulations.

**Contaminated packaging:** Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

### DMSO:

**DOT (US):** UN-Number: 1993 Class: CBL Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

### Thrombin:

**DOT (US):** Not dangerous goods.

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

## SECTION 15: REGULATORY INFORMATION

**OSHA Hazards:** DMSO: Combustible liquid, Target organ effect

Thrombin: Target organ effect, Skin and respiratory sensitizer, Irritant

**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:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.

**SARA 311/312 Hazards:** Thrombin: Acute Health Hazard

DMSO: Fire Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components:**

**Pennsylvania Right To Know Components:** Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

Thrombin, CAS-No. 9002-04-4

**New Jersey Right To Know Components:** Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

Thrombin, CAS-No. 9002-04-4

**California Prop. 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

### EU regulations:

| Component | Risk Phrases      | Safety Phrases             |
|-----------|-------------------|----------------------------|
| DMSO      | R10, R36/37/38    | S24/25, S36/37/39, S45     |
| Thrombin  | R36/37/38, R42/43 | S22, S24, S26, S36/37, S45 |

## 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.