

# SAFETY DATA SHEET

## Cat# BN00924 Cytochrome P450 Reductase (CPR) Activity Kit

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Cytochrome P450 Reductase (CPR) Activity Kit

**PRODUCT CODES:** Cat# BN00924

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

**ADDRESS:** G1 The Steelworks, Foley Street, Dublin 1

**EMERGENCY PHONE:** +353 1 8879802

### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| Component                  | Description                           | Volume | Safety Information |
|----------------------------|---------------------------------------|--------|--------------------|
| CPR Assay Buffer           | Proprietary Buffer                    | 50 ml  | No hazards         |
| G6P Standard (lyophilized) | Lyophilized                           | 1 vial | No hazards         |
| Inhibitor                  | In DMSO                               | 100 µl | See below          |
| NADPH Substrate Mix        | Lyophilized                           | 1 vial | No hazards         |
| G6P Standard Developer     | Contains proprietary substrate > 0.1% | 1 vial | See below          |
| Human CPR Positive Control | Lyophilized                           | 1 vial | No hazards         |

**NOTE:** The safety data shown below is based on pure ingredients: The amount in this kit comprises much less.

### SECTION 3: HAZARDS IDENTIFICATION

| Component             | CAS Number | EC-No.    | Molecular Weight | Chemical Formula                 |
|-----------------------|------------|-----------|------------------|----------------------------------|
| PROPRIETARY SUBSTRATE | --         | --        | --               | --                               |
| DMSO                  | 67-68-5    | 200-664-3 | 78.13            | C <sub>2</sub> H <sub>6</sub> OS |

#### PROPRIETARY SUBSTRATE:

##### Emergency Overview

**GHS Classification:** Acute toxicity, Oral (Category 4), H302  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Carcinogenicity (Category 2), H351

##### GHS Label elements, including precautionary statements

##### Pictogram:



**Signal word:** Warning

**Hazard statement(s):** H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

**Precautionary statement(s):** P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P321 Specific treatment (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

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P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

### HMIS Classification

Health hazard: 2

Flammability: 0

Physical hazards: 0

### NFPA Rating

Health Hazard: 2

Fire: 0

Reactivity Hazard: 0

### 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.

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## SECTION 4: FIRST AID MEASURES

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**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:** Take off contaminated clothing and shoes immediately. 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. Continue rinsing during transport to hospital.

**If swallowed:** DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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## SECTION 5: FIRE-FIGHTING MEASURES

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### 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 combustion products formed under fire conditions – no data available.

**Further information:** Use water spray to cool unopened containers.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**Personal precautions:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**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.

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**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 inhalation of vapor or mist. Avoid contact with skin and eyes.

#### 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

#### DMSO:

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

#### PROPRIETARY SUBSTRATE:

##### 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

Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

### SECTION 10: STABILITY AND REACTIVITY

| Property                          | PROPRIETARY SUBSTRATE                       | DMSO  |
|-----------------------------------|---|---|
| Chemical stability:               | Stable under recommended storage conditions |   |
| Conditions to avoid:              | Not data available                          | Heat, flames, sparks  |
| Materials to avoid:               | Strong oxidizing agents                     | Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents |
| Hazardous decomposition products: | No data available                           | Carbon oxides, sulfur oxides  |

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### **PROPRIETARY SUBSTRATE:**

**Acute toxicity:** 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:** Limited evidence of carcinogenicity in animal studies

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):** no data available

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

**Aspiration hazard:** no data available

**Signs and Symptoms of Exposure:** 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

### **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

**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.

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**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

### SECTION 12: ECOLOGICAL INFORMATION

#### **PROPRIETARY SUBSTRATE:**

**Persistence and degradability:** no data available

**Toxicity:** no data available

**Bioaccumulative potential:** Does not bioaccumulate

**Mobility in soil:** no data available

**PBT and vPvB assessment:** no data available

**Other adverse effects:** no data available

#### **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:** 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.

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

### SECTION 14: TRANSPORT INFORMATION

#### **PROPRIETARY SUBSTRATE & 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.

### 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:** 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:** PROPRIETARY SUBSTRATE: Acute Health Hazard, Chronic Health Hazard

DMSO: Fire Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components:** No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components:** PROPRIETARY SUBSTRATE, CAS-No. --

Dimethyl sulfoxide CAS-No. 67-68-5

**New Jersey Right To Know Components:** PROPRIETARY SUBSTRATE, CAS-No. --

Dimethyl sulfoxide CAS-No. 67-68-5

**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         |
|-----------------------|----------------|------------------------|
| PROPRIETARY SUBSTRATE | -              | -                      |
| DMSO                  | R10, R36/37/38 | S24/25, S36/37/39, S45 |

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## **SECTION 16: OTHER INFORMATION**

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### **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.