

SAFETY DATA SHEET

ONCO/Reveal™ Lung & Colon Cancer Panel

1. IDENTIFICATION

Product Name: ONCO/Reveal Lung & Colon Cancer Panel Kit,
24 reactions per kit, PN# HDA-LC-1001-24

Kit Components:

- LC Oligo Pool, PN# LC-103A-24
- Gene Specific PCR Master Mix, PN# MM-9001-24
- Indexing PCR Master Mix, PN# MM-9004-24

Company details

Name: Pillar Biosciences, Inc.
Address: 12 Michigan Drive
Natick, MA 01760 USA
Telephone: +1 508-655-3027

Emergency response

In case of emergencies: CHEMTREC
1-800-424-9300 (U.S. or Canada)
1-703-527-3887 (International)

Recommended use of product

For research use only
For use by trained professionals
only

2. HAZARD(S) IDENTIFICATION

GHS classification

The product is a kit consisting of individual ingredients. The classification of individual components can be found in section 3.

3. COMPOSITION/INFORMATION ON INGREDIENTS

LC Oligo Pool, PN# LC-103A-24

GHS classification

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Contains compounds considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazardous components

Dimethyl sulfoxide, DMSO

Gene Specific PCR Master Mix, PN# MM-9001-48**GHS classification**

Not a hazardous substance or mixture.

Hazardous components

None.

Indexing PCR Master Mix, PN# MM-9004-24**GHS classification**

Not a hazardous substance or mixture.

Hazardous components

None.

Chemical Name	CAS	Concentration
Dimethyl sulfoxide, DMSO	67-68-5	≤ 20%

NFPA	
Health:	1
Fire:	1
Reactivity:	0

4. FIRST-AID MEASURES**Route of Exposure:**

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If symptoms persist, call a physician.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water.

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Eye contact:	Remove contact lenses. Immediately flush opened eye with water. Wash eyes with plenty of water for at least 15 minutes. Consult a physician.
Swallowed:	Keep respiratory tract clear. Rinse mouth with water. Do not induce vomiting. Consult a physician.
General:	Consult a physician after significant exposure and/or persistent symptoms.
Note to Physician:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing agents:	For small fires use carbon dioxide, dry chemical, water spray, or foam extinguishers. Cool closed containers exposed to fire with water spray. For large fires use extinguishing media suitable for the surrounding environment.
Hazardous Combustion products:	Carbon oxides, Sulphur oxides, nitrogen oxides.
Special protective equipment and precautions for fire-fighters:	Wear self-contained breathing apparatus if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:	Use personal protective equipment (PPE). Avoid breathing vapors, mist, or gas. Use in well-ventilated area.
Environmental precautions:	Do not allow product to enter drains, sewage, surface or ground water.
Methods and materials for containment and clean up:	Remove spilled liquids mechanically with inert absorbent material and dispose according to local regulations. Keep in appropriate, closed containers for disposal. Report spills to the environment of any spill materials that reach the RQ.

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7. HANDLING AND STORAGE

Precautions for safe handling:

- Use good laboratory practices. Do not eat, drink, or smoke in operation area.
- Avoid formation of aerosol.
- Immediately remove soiled or contaminated clothing.
- Wash hands before and after use.
- Avoid contact with eyes or skin.
- Use in a well-ventilated area and keep containers tightly sealed.

Conditions for safe storage:

Store according to individual container labelling and keep container tightly sealed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

LC Oligo Pool, PN# LC-103A-24

Hazardous components

Dimethyl sulfoxide, DMSO

Control parameters

Components with workplace control parameters:

Components	CAS	Value type	Permissible concentration	Basis
Dimethyl Sulfoxide, DMSO	67-68-5	TWA	250 ppm	US WEEL

Appropriate engineering controls:

Ensure adequate ventilation, especially in confined areas

Personal protective equipment:

- **Eye protection** Wear safety glasses with side shields

- **Hand protection** Wear impervious gloves

- **Skin and body protection** Wear lightweight protective clothing

- **Hygiene measures** Handle using good industrial hygiene and safety practices

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9. PHYSICAL AND CHEMICAL PROPERTIES

LC Oligo Pool, PN# LC-103A-24

Hazardous components

Dimethyl sulfoxide, DMSO

Appearance:	Clear, colorless liquid
Odor:	Faint garlic odor
pH:	Not available
Melting point:	18.5 °C (65.3 °F)
Freezing point:	18.5 °C (65.3 °F)
Initial boiling point:	189 °C (372.2 °F)
Flash point:	87 °C (188.6 °F) (Closed Cup)
Evaporation rate:	Not available
Flammability:	Combustible liquid. Will be ignited by heat, sparks or flames. Vapors will spread along ground and collect in low or confined areas (sewers, basements, tanks). Containers may explode when heated.
Explosive limits:	Vapors may form explosive mixtures with air
Vapor pressure:	59.4 Pa at 20 °C (68 °F)
Vapor density:	2.7 (Air = 1)
Relative density:	1.1 (Water = 1)
Solubility in water:	Completely miscible
Auto-ignition temperature:	Does not self-ignite
Decomposition temperature:	Not available
Viscosity:	Not available

10. STABILITY AND REACTIVITY

LC Oligo Pool, PN# LC-103A-24

Hazardous components

Dimethyl sulfoxide, DMSO

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat
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Chemical stability:	Stable under normal conditions
Possibility of hazardous reactions:	None known
Conditions to avoid:	Stable under normal conditions
Incompatible materials:	Strong oxidizers, perchlorates
Hazardous decomposition products:	Methane, ethylene, and sulfur dioxide

11. TOXICOLOGICAL INFORMATION**LC Oligo Pool, PN# LC-103A-24****Hazardous components**

Dimethyl sulfoxide, DMSO

Acute oral toxicity: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea

Acute inhalation toxicity: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Exposure to high concentrations of Dimethyl sulfoxide could cause lowering of consciousness.

Acute dermal toxicity: Unknown

Aspiration toxicity: Not classified

Skin corrosion/irritation-Assessment: Dimethyl sulfoxide may irritate the skin and mucous membranes

Serious eye damage/eye irritation-Assessment: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Dimethyl sulfoxide may accelerate skin absorption of other materials. A skin irritation assay performed in rabbit (OECD 404) revealed no more than a very slight or well-defined erythema, which disappeared in 3 days

Respiratory or skin sensitization-Assessment: Sensitization tests using DMSO performed in guinea pigs and mice were uniformly negative. A

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skin sensitization assay performed in humans was also negative.

Genotoxicity - Assessment:**IARC:**

DMSO was negative for genotoxicity when tested in the Salmonella typhimurium pre-incubation protocol at concentrations of DMSO (100, 333, 1000, 3333, 10000 ug) /with strains TA97, TA98, TA100, TA102, TA104, TA1537, and TA1538

DMSO was tested in Chinese hamster ovary cells to a maximum concentration of 5000 ug/mL with and without metabolic activation. DMSO did not induce cell toxicity or cell cycle delay, and did not induce an increase in the incidence of SCEs.

OSHA:

There are no standard carcinogenicity studies conducted with DMSO, but considering the lack of genotoxic potential, the absence of target organs in many repeated dose toxicity studies performed with diverse animal species, routes of administration and exposure durations up to 2 years and the results of some initiation/promotion studies, it is not scientifically justified to perform a carcinogenicity study.

NTP:

This product does not contain any carcinogens or potential carcinogens as listed by ACGIH, IARC, OSHA, or NTP.

Reproductive toxicity:

In a Reproduction/Developmental Toxicity Screening Test performed following OECD 421, the NOAEL for parental toxicity, reproductive performance (mating and fertility) and toxic effects on the progeny was considered to be 1000 mg/kg/day

STOT - single exposure:

No data available

STOT - repeated exposure:

No data available

12. ECOLOGICAL INFORMATION

LC Oligo Pool, PN# LC-103A-24

Hazardous components

Dimethyl sulfoxide, DMSO

Ecotoxicity:

Toxicity to fish:	Danio rerio: LC50 > 25 g/L, 96-hr, freshwater, static;
Toxicity to algae:	Green algae: EC50 = 27448.3 mg/, 96-hr Green algae: ChV = 426.9 mg/L, 96-hr
Toxicity to fish (chronic):	No data available
Toxicity to bacteria:	No data available

Persistence and degradability:

- DMSO is not considered as persistent in environment
- No biodegradation data available
- Low bioconcentration expected in aquatic organisms
- May adsorb to soil particles

Bioaccumulative potential:

Octanol/water partition coefficient:	Based on its log Kow value (-1.35) DMSO has a low potential for bioaccumulation
Mobility in soil:	DMSO Log Koc is estimated as 0.64, using a log Kow of -1.35 and a regression-derived equation. This estimated Koc value suggests that DMSO is expected to have very high mobility in soil.

13. DISPOSAL CONSIDERATIONS

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Hazardous components

Dimethyl sulfoxide, DMSO

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Disposal methods:

- Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Local regulations may be more stringent than regional or national requirements
- Wear chemically compatible gloves and protective clothing. Avoid breathing vapor. Place product in appropriately labeled container for disposal
- Do not allow product to contaminate waterways

Contaminated packaging:

- Empty remaining contents and dispose as if unused product
- Empty containers should be taken to an approved waste handling site for recycling or disposal
- Do not reuse containers

14. TRANSPORT INFORMATION**International Regulation**

IATA-DGR:

Not regulated as a dangerous good

IMDG-Code:

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not applicable, packaged goods

National Regulations

49 CFR:

Not regulated as a dangerous good

15. REGULATORY INFORMATION

Use general safety regulations when handling chemicals.

Inventories:

The hazardous components are listed on the following inventories

AICS:

DMSO

DSL:

DMSO

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ENCS:	DMSO
IECSC:	DMSO
KECL:	DMSO
NZIoC:	DMSO
PICCS:	DMSO
REACH:	DMSO
TSCA:	DMSO

CERCLA Reportable Quantity: No ingredients listed

SARA

302:	No ingredients listed
304 Extremely hazardous substances reportable quantity:	No ingredients listed
311/312:	No ingredients listed
313:	No ingredients listed

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 or Class 2 ozone depleters

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances, Priority Pollutants, or Toxic Pollutants under the CWA

Carcinogenetic categories:

Environmental Protection Agency (EPA):	No ingredients listed
International Agency for Research on Cancer (IARC):	No ingredients listed
National Toxicology Program (NTP):	No ingredients listed
Threshold Limit Value established by ACGIH:	Not established
German Maximum Workplace Concentration (MAK):	50 ml/m ³

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National Institute for Occupational Safety and Health (NIOSH): No PEL established

Occupational Safety and Health Administration (OSHA): No PEL established

California Proposition 65:

Chemicals known to cause cancer: No ingredients listed

Reproductive toxicity in females: No ingredients listed

Reproductive toxicity in males: No ingredients listed

Developmental toxicity: No ingredients listed

U.S. State Regulations:

Massachusetts Right to Know: No ingredients listed

New Jersey Right to Know: Dimethyl sulfoxide (DMSO)

Pennsylvania Right to Know: No ingredients listed

Water Hazard class: Slightly hazardous for water

16. OTHER INFORMATION

The information provided is correct to the best of our knowledge, information and belief at the date of publication. The information given is designed merely as guidance for the safe handling, use, processing, storage, transportation, disposal and release of the specific contents. The information relates only to the specific material designated and may not be valid for material used in combination with any other materials or in any process not explained within the text.

Date of Preparation of SDS: 09 January 2020