**PRODUCT**

Protein G PLUS is provided as an agarose conjugate for use in immunoprecipitation only. The product is provided as 0.5 ml agarose in 2.0 ml PBS buffer with 0.02% azide. Protein G PLUS-Agarose is pre-blocked with BSA to reduce non-specific immunoglobulin binding. Sufficient product is provided for 100 immunoprecipitation reactions, to be used at 20 μl resuspended volume per reaction.

**SPECIFICITY**

Protein G PLUS-Agarose is suitable for immunoprecipitation of mouse IgG1, IgG2a, IgG2b and IgG2, rat IgG1, IgG2a, IgG2b and IgG2c, rabbit and goat polyclonal Abs, and human IgG1, IgG2, IgG3 and IgG4.

**PROCEDURE**

- Incubate cultured cells (80-90% confluent monolayer in 100 mm cell culture plate or approximately 2-5 x 10^5 suspension cells in flask).
- Add 3 ml ice cold RIPA buffer to cell monolayer and incubate at 4°C for 10 minutes. For suspension cells, add the RIPA buffer to washed cell pellet in a 15 ml conical centrifuge tube.
- Disrupt cells by repeated aspiration through a 21 gauge needle and transfer to a 15 ml conical centrifuge tube.
- Wash cell culture plate with additional 1.0 ml ice cold RIPA buffer and combine with original extract.
- Pellet cellular debris by centrifugation at 10,000 xg for 10 minutes at 4°C. Transfer supernatant to a fresh 15 ml conical centrifuge tube on ice. Preclear lysate (optional step) by adding 1.0 μg of the appropriate control IgG (normal mouse, rat, rabbit or goat IgG, corresponding to the host species of the primary antibody), together with 20 μl of resuspended volume of Protein G PLUS-Agarose. Incubate at 4°C for 30 minutes.
- Pellet beads by centrifugation at 2,500 rpm (approximately 1,000 xg) for 5 minutes at 4°C. Transfer supernatant (cell lysate) to a fresh 15 ml conical centrifuge tube on ice.
- Transfer 1 ml of the above cell lysate, or approximately 100-500 μg total cellular protein, to a 1.5 ml microcentrifuge tube. Add 1-10 μl (i.e., 0.2-2 μg) primary antibody (optimal antibody concentration should be determined by titration) and incubate for 1 hour at 4°C.
- Add 20 μl of resuspended volume of Protein G PLUS-Agarose. Cap tubes and incubate at 4°C on a rocker platform or rotating device for 1 hour to overnight.
- Collect immunoprecipitates by centrifugation at 2,500 rpm (approximately 1,000 xg) for 5 minutes at 4°C. Carefully aspirate and discard radioactive supernatant.
- Wash pellet 4 times with 1.0 ml RIPA buffer (more stringent) or PBS (less stringent), each time repeating centrifugation step above.
- After final wash, aspirate and discard supernatant and resuspend pellet in 40 μl of 1x electrophoresis sample buffer.
- Boil samples for 2-3 minutes and analyze 20 μl aliquots by SDS-PAGE and autoradiography. Unused samples may be stored at -20°C.

**SELECT PRODUCT CITATIONS**


**STORAGE**

Store at 4°C, do not freeze; stable for one year from the date of shipment.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.

**IMMUNOPRECIPITATION REAGENTS**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>SPECIFICITY</th>
<th>CAT. #</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein A-Agarose</td>
<td>mouse IgG2a, IgG2b and IgA rabbit polyclonal Abs</td>
<td>sc-2001</td>
<td>2.0 ml</td>
</tr>
<tr>
<td>Protein G PLUS-Agarose</td>
<td>mouse IgG1, IgG2b, IgG2a and IgG3 rat IgG2b, IgG2b, IgG2a, and IgG3 rabbit and goat polyclonal Abs human IgG1, IgG2, IgG3 and IgG4</td>
<td>sc-2002</td>
<td>2.0 ml</td>
</tr>
<tr>
<td>Protein A/G PLUS-Agarose</td>
<td>all of the above Abs</td>
<td>sc-2003</td>
<td>2.0 ml</td>
</tr>
<tr>
<td>Protein L-Agarose</td>
<td>mouse, rat, human IgG, scFv and Fab fragments, mouse and human IgM, IgE and IgA</td>
<td>sc-2336</td>
<td>2.0 ml</td>
</tr>
</tbody>
</table>

Immunoprecipitation agarose conjugates are pre-blocked with BSA to reduce non-specific immunoglobulin binding and are provided at a concentration (0.5 ml agarose/2.0 ml) suitable for use at 20 μl per immunoprecipitation reaction. Number of reactions: 100.
SAFETY DATA SHEET
Santa Cruz Biotechnology, Inc.
Revision date: 11-Dec-2017
Version: 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: Protein G PLUS-Agarose
Product Code: SC-2002

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122).

Classification
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements
Signal word: Not classified
Hazard statements: Not classified
Symbols/Pictograms: Not classified

Precautionary Statements - Prevention: Wash hands thoroughly after handling
Precautionary Statements - Response: IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC): Not applicable

Other Information
Unknown acute toxicity: 100% of the mixture consists of ingredient(s) of unknown toxicity.

NFPA
Health hazards: -
Flammability: -
Stability: -
Physical and chemical properties: -

HMIS
Health hazards: -
Flammability: -
Physical hazards: -
Personal protection: -

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight: No information available
Formula: No information available

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
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</thead>
<tbody>
<tr>
<td>PBS with Azide</td>
<td>-</td>
<td>70 - 90</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Santa Cruz Biotechnology, Inc. www.scbt.com
4. FIRST AID MEASURES

First Aid Measures
General advice
Consult a physician if necessary. Remove to fresh air.
Eye contact
Wash with plenty of water.
Skin Contact
Wash skin with soap and water.
Inhalation
Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration
Ingestion
Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects, both acute and delayed
Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed
Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
None.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
No information available.
Hazardous combustion products
No information available.

Explosion data
Sensitivity to Mechanical Impact
No information available.
Sensitivity to Static Discharge
No information available.

Protective equipment and precautions for firefighters
Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions
Ensure adequate ventilation, especially in confined areas.

Environmental precautions
Environmental precautions
See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so.
Methods for cleaning up
Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE
Precautions for safe handling
Advice on safe handling
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 4 °C.
Incompatible materials
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Wear safety glasses with side shields (or goggles).
Skin and Body Protection
Wear protective gloves and protective clothing.
Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
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<tbody>
<tr>
<td>Physical State</td>
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<tr>
<td>Appearance</td>
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<tr>
<td>Odor</td>
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<tr>
<td>pH</td>
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<td>Melting point/freezing point</td>
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<td>Boiling point</td>
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<tr>
<td>Flash point</td>
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<tr>
<td>Density</td>
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<tr>
<td>Evaporation rate</td>
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<td>Upper flammability limits</td>
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<td>Lower flammability limit</td>
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<tr>
<td>Vapor pressure</td>
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<tr>
<td>Vapor density</td>
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</tr>
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<td>Specific gravity</td>
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<tr>
<td>Water solubility</td>
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<tr>
<td>Solubility in other solvents</td>
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</tr>
<tr>
<td>Partition coefficient</td>
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</tr>
<tr>
<td>Autoignition temperature</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Kinematic viscosity</td>
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</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
Chemical stability
Possibility of Hazardous Reactions
Hazardous polymerization
Conditions to avoid
Incompatible materials
Hazardous Decomposition Products

Not applicable
Stable under recommended storage conditions.
None under normal processing.
No information available.
Extremes of temperature and direct sunlight.
Strong oxidizing agents.
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Eye contact
Skin Contact
Ingestion

No data available.
No data available.
No data available.
No data available.

Information on toxicological effects
Symptoms

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity

No information available.

Numerical measures of toxicity - Product Information
Unknown acute toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

May cause long lasting harmful effects to aquatic life

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability
Bioaccumulation
Mobility

No information available.
No information available.
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes
Contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Do not reuse container.

14. TRANSPORT INFORMATION

DOT
IMDG

Not regulated
Not regulated
IATA  Not regulated

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
No information available

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard  No
Chronic Health Hazard  No
Fire hazard  No
Sudden release of pressure hazard  No
Reactive hazard  No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

16. OTHER INFORMATION

Revision note  No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet