SANTA CRUZ BIOTECHNOLOGY, INC.

Protein A-Agarose: sc-2001

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

PRODUCT

Protein A 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 A-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 A-Agarose is suitable for immunoprecipitation of mouse IgG_{2a}, IgG_{2b}, and IgA, rabbit IgG, and human IgG_1, IgG_2 and IgG_4.

PROCEDURE

- Incubate cultured cells (80-90% confluent monolayer in 100 mm cell culture plate or approximately 2-5 x 10^7 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 A-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 A-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.
- Optional: After boiling, samples may be centrifuged to pellet the agarose beads followed by SDS-PAGE analysis of the supernatant.

STORAGE

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

SELECT PRODUCT CITATIONS

1. Yu, H., et al. 1996. Activation of a novel calcium-dependent protein-tyrosine kinase. Correlation with c-Jun N-terminal kinase but not mitogen-activated protein kinase activation. J. Biol. Chem. 271: 29993-29998.
2. Roberts, R., et al. 1997. Altered phosphorylation and intracellular distribution of a (CUG)n triplet repeat RNA-binding protein in patients with myotonic dystrophy and in myotonin protein kinase knockout mice. Nature 94: 13221-13226.
3. Alemu, E.A., et al. 2010. Transforming growth factor-β-inducible early response gene 1 is a novel substrate for atypical protein kinase Cs. Cell. Mol. Life Sci. 68: 1953-1968.
4. Koch, D., et al. 2011. Proper synaptic vesicle formation and neuronal network activity critically rely on syndapin I. EMBO J. 30: 4955-4969.
5. Zhao, X.Y., et al. 2011. Synergistic induction of galectin-1 by CCAAT/enhancer binding protein α and hypoxia-inducible factor 1α and its role in differentiation of acute myeloid leukemic cells. J. Biol. Chem. 286: 36808-36819.
6. Wang, K., et al. 2011. Quercetin induces protective autophagy in gastric cancer cells: involvement of Akt-mTOR- and hypoxia-induced factor 1α-mediated signaling. Autophagy 7: 966-978.
7. Beebe, JS., et al. 2203. Pharmacological characterization of CP-547,632, a novel vascular endothelial growth factor receptor-2 tyrosine kinase inhibitor for cancer therapy. Cancer Res. 63: 7301-7309.

RESEARCH USE

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

IMMUNOPRECIPITATION REAGENTS

PRODUCT	SPECIFICITY	CAT. #	AMOUNT
Protein A-Agarose	mouse IgG_{2a}, IgG_{2b} and IgA rabbit polyclonal Abs human IgG_1, IgG_2 and IgG_4	sc-2001	2.0 ml
Protein G PLUS-Agarose	mouse IgG_1, IgG_{2a}, IgG_{2b} and IgG_3 rat IgG_1, IgG_{2a}, IgG_{2b} and IgG_{2c} rabbit and goat polyclonal Abs human IgG_1, IgG_2, IgG_3 and IgG_4	sc-2002	2.0 ml
Protein A/G PLUS-Agarose	all of the above Abs	sc-2003	2.0 ml
Protein L-Agarose	mouse, rat, human IgG, scFv and Fab fragments, mouse and human IgM, IgE and IgA	sc-2336	2.0 ml

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 20-Nov-2017
Version 1

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

Product identifier

Product Name	Protein A-Agarose
Product Code	SC-2001

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

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

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	-	**HMIS**	Health hazards	-
	Flammability	-		Flammability	-
	Stability	-		Physical hazards	-
	Physical and chemical properties	-		Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight	No information available
Formula	No information available

Chemical Name	CAS No	Weight %	Oral LD50	Dermal LD50	Inhalation LC50
PBS with Azide	-	70 - 90	-	-	-

Protein A-Agarose	-	10 - 30	-	-	-

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

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

Physical State	liquid
Appearance	No information available
Odor	No information available

Property	**Values**
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	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	No information available.
Bioaccumulation	No information available.
Mobility	No information available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

DOT	Not regulated
IMDG	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