



Catalog #

Aliquot Size

PL01-RA551-100

100 mL

PL01-RA551-500

500 mL

Protein L Resin

Catalog # PL01-RA551

Lot # 1S2403-3

Product Description

Protein L resin is genetically engineered protein L-modified agarose. Protein L has a strong binding capacity to the kappa light chain of the antibody. It is a versatile affinity chromatography media for the isolation and purification of antibody fragments of various sizes, such as Fabs, single-chain antibodies (scFv) and domain antibodies (dAbs).

Storage and Stability

Store at 2°C - 8°C. Product is stable for 24 months under these conditions.

Specifications

Features	Specifications
Support/matrix	Highly cross-linked 4% agarose
Ligand	Recombinant Protein L
Density of Ligand	~6 mg Protein L/ml matrix
Binding capacity	~12mg human IgG/ml matrix
Average particle size	45-165 µm
Flow velocity (cm/h)	≤500
Max. tolerance pressure	0.3 Mpa
pH stability	2-13 Stable in commonly used aqueous buffers; 8 M urea; 6 M guanidine hydrochloride; 1 M acetic acid
Chemical stability	
Storage Buffer	1XPBS with 20% Alcohol
Storage temperature	2°C - 8°C

Protein L Resin

Catalog #

PL01-RA551

Lot #

1S2403-3

Stability

24mo at 2°C - 8°C from date of shipment

Storage & Shipping

Store at 2°C - 8°C.

Product shipped on ice pack.

To place your order, please contact us by phone 1-778-326-0223 or 1-888-606-3424 (Toll free) or by email: orders@signalchemdx.com or info@signalchemdx.com - www.signalchemdx.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMANS OR ANIMALS.

Protein Purification Protocol

The procedure outlined below is recommended as a starting point for purifications using this resin. All procedures and buffer formulations may be optimized by the user based on their own specific antibody samples and experiences.

Buffer Preparation

All water and buffers are recommended to be filtered with a 0.22 µm or 0.45 µm filter prior to use.

Storage buffer: 20% ethanol in 1X PBS

Equilibration buffer: 20 mM phosphate buffer (PB), 0.15 M sodium chloride (NaCl), pH 7.2

Elution buffer: 0.1M sodium citrate buffer

Neutralization Buffer: 1M Tris-HCl, pH 9

Column Packing and Equilibration

1. Assemble the column according to the manufacturer's instructions. Ensure that the stop plug is in place at the bottom of the column tube.
2. Gently mix resin solution to create a homogeneous suspended media slurry. Then add the resin to the column all at once. Avoid creating air bubbles by pouring it carefully along a thin capillary. Allow the suspended media slurry to settle again in the column so that the resin particles and storage buffer separate into distinct layers.
3. Allow the storage buffer to flow through and pass 5 column volumes of equilibration buffer through the column. Ensure that some liquid always remains above the resin in the column so that the resin remains uniformly packed and that no air bubbles are introduced as the top dries out.

Antibody Purification

1. Load the sample into the equilibrated column. Sample loading amount should be selected based on the properties of the sample and the amount of chromatography medium. Alternatively, a linear experiment can be conducted to determine the optimal sample loading amount. Sample pre-treatment includes desalting, equilibration buffer preparation, and filtration through a 0.45µm microporous membrane.
2. Allow the sample to flow through and wash with 5 to 10 column volumes of equilibration buffer to remove unbound components.
3. Elute the bound protein using a lower pH (2.0-3.5) elution buffer. After elution, it is recommended to adjust the eluate to neutral pH using 1M pH 9.0 Tris-HCl buffer to maintain the activity of the antibody protein.

Column Regeneration

1. Wash the column with 3-5 column volumes of elution buffer at the operating flow rate. Then equilibrate with 3-5 column volumes of equilibration buffer. If there are inactivated proteins or lipid substances that cannot be removed during regeneration, they can be removed using Cleaning in Place (CIP).

Clean in Place (CIP)

After prolonged use, excessive impurities in the medium can lead to an increase in column backpressure, thereby reducing column efficiency and the binding capacity of the resin, and even damaging the resin's lifetime. Regular CIP (Cleaning In Place) can effectively protect the resin. If the resin is only slightly contaminated, CIP can be performed every 1-5 process cycles. However, for resins that are heavily contaminated, immediate CIP treatment is necessary. The medium can be CIP-treated using the following methods:

1. Wash the chromatography column with 15 mM NaOH with a contact time of 15 minutes, followed by immediate rinsing with deionized water for 10 column volumes.
2. Wash the chromatography column with an 8 M urea solution containing 0.05 M acetic acid at pH 2.5, followed by immediate rinsing with deionized water for 10 column volumes.

To place your order, please contact us by phone 1-778-326-0223 or 1-888-606-3424 (Toll free) or by email: orders@signalchemdx.com or info@signalchemdx.com - www.signalchemdx.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMANS OR ANIMALS.

SAFETY DATA SHEET

Article 1 - Product Identification

Product Name: Protein L Resin
Catalog # PL01-RA551

This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.

Supplier of Datasheet: SignalChem Diagnostics Inc.
 Street Address: 190-13160 Vanier Place
 City, Prov. Postal Code: Richmond, BC, V6V 2J2
 Country: Canada
 Emergency Phone: 1-888-606-3424 (Toll free)
 1-778-326-0223 (local)

Article 2 - Hazard Identification

- **GHS classification:**
 - Flammable liquids (Category 3), H226
 - Eye irritation (Category 2A), H319

- **Hazard Pictograms:**



- **Signal words:** Warning
- **Hazard statements:**
 - H226 Flammable liquid and vapor
 - H319 Causes serious eye irritation
- **Precautionary statements:**
 - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 - P233 Keep container tightly closed.
 - P264 Wash skin thoroughly after handling.
 - P280 Wear protective gloves / protective clothing / eye protection / face protection
 - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
 - P337+P313 If eye irritation persists: Get medical advice / attention.
 - P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
 - P403 + P235 Store in a well-ventilated place. Keep cool.
 - P501 Dispose of contents / container to an approved waste disposal plant.
- **Other hazards:** None known.

Article 3 – Composition/Information on Ingredients

Chemical Characterization: Mixtures.

Description: This product consists of the substances listed below.

Common name	Chemical name	CAS-No.	Concentration
Agarose	Agarose	9012-36-6	50%
Ethanol	Ethanol	64-17-5	20%
Sodium Chloride	Sodium Chloride	7647-14-5	0.72%
Sodium Phosphate, Dibasic	Sodium Phosphate, Dibasic	7782-85-6	0.25%
Potassium Phosphate, Monobasic	Potassium Phosphate, Monobasic	7778-77-0	0.024%
Potassium Chloride	Potassium Chloride	7447-40-7	0.02%

To place your order, please contact us by phone 1-778-326-0223 or 1-888-606-3424 (Toll free) or by email: orders@signalchemdx.com or info@signalchemdx.com - www.signalchemdx.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMANS OR ANIMALS.

SAFETY DATA SHEET

Article 4 – First-aid Measures

- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** In case of irritation by inhaling this product, move affected person to fresh air and await recovery. If irritation persists, seek immediate medical attention. If casualty cannot breathe, give artificial respiration and seek immediate medical attention.
- **After skin contact:** Immediately wash with soap and plenty of water and rinse thoroughly. Consult a physician.
- **After eye contact:** Rinse opened eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Consult a physician.
- **After swallowing:** Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If you feel unwell, seek medical advice.

Article 5 - Fire-fighting Measures

- **Suitable extinguishing media:** Use water spray, alcohol-resistant foam, extinguishing powder, carbon dioxide, or other appropriate measure that is suitable to the environment.
- **Specific hazards arising from the substance or mixture:** Carbon oxides, Nitrogen oxides, Sulfur oxides, Hydrogen chloride gas, Sodium oxides.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary.

Article 6 – Accidental Release Measures

- **Personal precautions, protective equipment, and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Absorb on sand or vermiculite and place in closed containers for disposal.

Article 7 - Handling and Storage

- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.
- **Conditions for safe storage:** Store according to product label instructions. Keep container upright and tightly closed.

Article 8 - Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:**
Ethanol, 1000 ppm
- **Appropriate engineering controls:**
Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.
- **Individual protection measures:**
Respiratory protection:
Use appropriate respirator if there is inadequate ventilation by following the government standards.
Hand protection:
Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.
Eye/face protection:
Safety goggles with side-shields approved under appropriate government standards.
Skin/body protection:
Use appropriate clothing, footwear and any additional protection measures to protect from splashing or contamination.

Article 9 – Physical and Chemical Properties

Appearance: White/ opaque liquid (suspension)	Danger of explosion: Product does not present an explosion hazard.
Odour/Odour Threshold: Not determined.	Explosion limits: Not available.
pH: Not available.	Decomposition temperature: Not available.
Melting point/freezing point: Not determined.	Vapor pressure at 20 °C: Not available.
Boiling point/Boiling range: >100 °C.	Density: Not determined.
Flash point: 82.3 °C.	Relative density: Not determined.
Flammability (solid, gaseous): Not determined.	Vapor density: Not determined.
Ignition temperature: Not determined.	Evaporation rate: Not determined.
Auto-igniting: Product is not self-igniting.	Solubility in / Miscibility with Water: Insoluble.

To place your order, please contact us by phone 1-778-326-0223 or 1-888-606-3424 (Toll free) or by email: orders@signalchemdx.com or info@signalchemdx.com - www.signalchemdx.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMANS OR ANIMALS.

SAFETY DATA SHEET

Article 10 - Stability and Reactivity

- **Reactivity:** Stable under recommended transport and storage conditions.
- **Chemical stability:** Stable under recommended transport and storage conditions.
- **Possible hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat, flames and sparks.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** In the event of fire, see Section 5.

Article 11 - Toxicological Information

- **Acute toxicity:** estimate Oral > 5000 mg/kg.
- **LD/LC50:** Not available.
- **Skin corrosion/irritation:** Not available.
- **Serious eye damage/eye irritation:** Not available.
- **Respiratory or skin sensitization:** Not available.
- **Germ cell mutagenicity:** Not available.
- **Carcinogenicity:** No components are listed in IARC, or NTP, or OSHA, or ACGIH.
- **Reproductive toxicity:** Not available.
- **Teratogenicity:** Not available.
- **Specific target organ toxicity - single exposure/ - repeated exposure (GHS):** Not available.
- **Aspiration hazard:** Not available.
- **Potential health effects:**
 - Inhalation: No data available
 - Ingestion: No data available
 - Skin: No data available
 - Eyes: No data available
- **Signs and Symptoms of Exposure:** No data available
- **Synergistic effects:** Not available.

Article 12 - Ecological Information

- **Eco-toxicity:** No data available.
- **Biodegradability:** Not applicable.
- **Bio-accumulative potential:** Not applicable.
- **Mobility in soil:** Not applicable.
- **PBT and vPvB assessment:** Not applicable.
- **Other adverse effects:** Not applicable.

Article 13 - Disposal Considerations

- **Disposal methods:** In accordance to applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Disposal should be made in accordance to official regulations. Use water or cleansing agents to clean the area.

Article 14 - Transport Information

- **DOT:** Not dangerous goods.
- **IMDG:** Not dangerous goods.
- **IATA:** Not dangerous goods.

Article 15 - Regulatory Information

- **WHMIS Classification:** Non-hazardous.
- **GHS label elements:** Not applicable.
- **Signal word:** Not applicable.
- **Hazard statements:** Not applicable.

Article 16 - Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.

To place your order, please contact us by phone 1-778-326-0223 or 1-888-606-3424 (Toll free)
or by email: orders@signalchemdx.com or info@signalchemdx.com - www.signalchemdx.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMANS OR ANIMALS.