



Catalog

Aliquot Size

AH01-E311H-50	50 µg
AH01-E311H-100	100 µg
AH01-E311H-200	200 µg
AH01-E311H-500	500 µg

ATP-dependent DNA helicase RecQ, Active

Recombinant *E. coli* protein expressed in *E. coli* cells

Catalog # AH01-E311H

Lot # 1Y2406-1

Product Description

Recombinant full-length *E. coli* ATP-dependent DNA helicase RecQ expressed in *E. coli* using C-terminal His-tag. The protein accession number is [WP_032255548](#).

Alternative name(s)

RecQ

Formulation

Recombinant protein stored in 20mM Tris-HCl, 300mM KCl, 10% glycerol, 1mM DTT pH 8.0.

Storage and Stability

Store product at -70°C . For optimal storage, aliquot into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

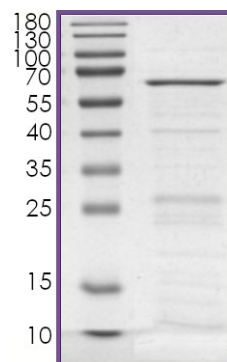
Scientific Background

RecQ helicases catalyze double-stranded DNA unwinding in the 3' to 5' direction, which is driven by ATPase activity that is dependent on a bivalent cation (1). RecQ helicases are important in coordinating genome maintenance and preserving genomic integrity in prokaryotes and eukaryotes (2). *E. coli* RecQ plays an important role in resuming DNA replication at stalled replication forks after repairing UV-induced DNA damage (3). They are also important in preventing future chromosomal abnormalities that result from DNA damage (3).

References

1. Sharma, S. et al: Mechanisms of RecQ helicases in pathways of DNA metabolism and maintenance of genomic stability. *Biochem J*, 2006; 398(3): 319-337.
2. Bennet, R. J., Keck, J. L.: Structure and function of RecQ DNA helicases. *Crit Rev Biochem Mol Biol.*, 2004; 39(2): 79-97.
3. Hishida, T. et al: Role of the Escherichia coli RecQ DNA helicase in SOS signaling and genome stabilization at stalled replication forks. *Genes Dev.*, 2004; 18(15): 1886-1897.

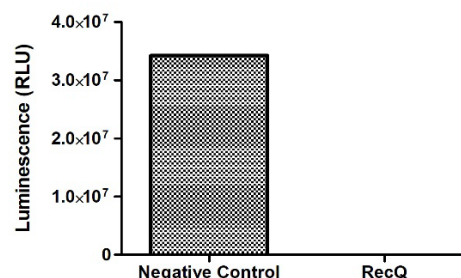
Purity



SDS-PAGE gel image

The purity of RecQ was determined to be **>70%** by densitometry. Calculated MW **69.7 kDa**. Approx. MW **70 kDa**.

Activity



RecQ activity was determined by measuring its hydrolytic activity of adenosine triphosphatase (ATPase) using a luminescence assay. Enzyme activity is inversely proportional to luminescence.

ATP-dependent DNA helicase RecQ, Active

Recombinant *E. coli* protein expressed in *E. coli*

Catalog #	AH01-E311H
Lot #	1Y2406-1
Purity	>70%
Concentration	0.1 µg/µl
Stability	1yr at -70°C from date of shipment
Storage & Shipping	Store product at -70°C . For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on dry ice.

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SAFETY DATA SHEET

Article 1 - Product Identification

Product Name: ATP-dependent DNA helicase RecQ, Active**Catalog # AH01-E311H**

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

- **WHMIS Classification:** Not WHMIS controlled.
- **GHS classification:** Not GHS classified.
- **Hazard Pictograms:** No labelling applicable.
- **Signal words:** None.
- **Hazard statements:** None.
- **Precautionary statements:** None.
- **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
Glycerol	Glycerol	56-81-5	10%
KCl	Potassium Chloride	7447-40-7	2.2%
Tris-HCL	2 – Amino – 2 - (hydroxymethyl) propane - 1, 3 - diol hydrochloride	1185-53-1	0.2423%
DTT	1,4-Dithio-DL-threitol	3483-12-2	0.0154%
Protein	N/A	N/A	≤ 1%

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. 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, extinguishing powder, carbon dioxide, or other appropriate measure that is suitable to the environment.
- **Specific hazards arising from the substance or mixture:** None known.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary.

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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:** N/A
- **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: Colorless liquid.	Danger of explosion: Not determined.
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: Not determined.	Density: Not determined.
Flash point: Not determined.	Relative density: Not determined.
Flammability (solid, gaseous): Not determined.	Vapor density: Not determined.
Ignition temperature: Not determined.	Evaporation rate: Not determined.
Auto-igniting: Not determined.	Solubility in / Miscibility with Water: Fully miscible.

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 and moisture.
- **Incompatible materials:** Not determined.
- **Hazardous decomposition products:** Not determined.

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Article 11 - Toxicological Information

- **Acute toxicity:** Not available.
- **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.

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