

chromotek® Strep-NanoTrap Agarose

Product Code: qta

Product Information

Description: The ChromoTek Strep-NanoTrap Agarose consists of an anti-Strep-tag® Nanobody/VHH, which is coupled to agarose beads. It can be used for the immunoprecipitation of proteins fused to the peptide SAWSHPOFEK, also known as Strep-Tag® from cell extracts of various organisms.

Applications: IP, Co-IP

Specificity/Target: Binds specifically to the peptide sequence SAWSHPOFEK, also known as Strep-Tag® or Strep-TagII®, fused to a protein of interest at N- or C-terminal position. In addition, this trap binds to the peptide sequence SAWSHPOFEKGGGSGGGSGGSAWSHPOFEK, also known as Twin-Strep-Tag®, fused to a protein of interest at N- or C-terminal position.

Binding capacity: 25 µg of recombinant SAWSHPOFEK-tagged protein (~30 kDa) per 25 µL bead slurry

Bead Size: 90 µm (cross-linked 4 % agarose beads)

Elution Buffer: 2x SDS-sample buffer (Lämmli), 200 mM glycine pH 2.5 or with SAWSHPOFEK peptide

Wash Buffer Compatibility: 1M NaCl, 5 mM DTT, 5 mM β-mercaptoethanol, 5 mM TCEP, 2% NP40, 2% Triton X-100, 0.1% SDS, 2-3 M Urea

Type: Nanobody

Class: Recombinant

Host: Alpaca

Shipment: Shipped at ambient temperature

Storage Buffer: 20 % ethanol

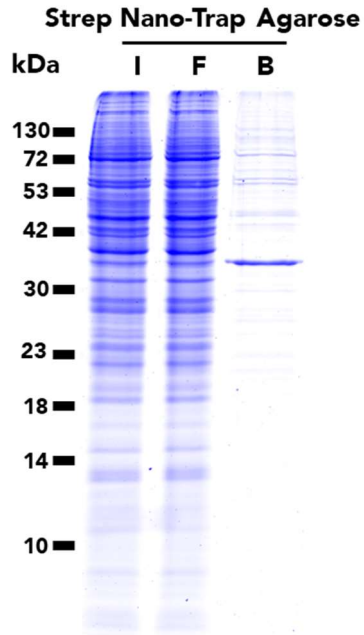
Storage Condition: Upon receipt store at +4°C. Do not freeze!

Stability: Stable for 1 year upon receipt

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Selected Validation Data



Immunoprecipitation of StrepTag-AurKinB fusion protein from transfected HEK293T cells using Strep Nano-Trap Agarose. I: Input, F: Flow-Through, B: Bound.

Suggested Buffer Compositions for IP

| Buffer | Composition |
|------------------------|--|
| Lysis Buffer | 10 mM Tris/Cl pH 7.5, 150 mM NaCl, 0.5 mM EDTA, 0.5 % Nonidet™ P40 Substitute (adjust the pH at +4°C) |
| RIPA Buffer | 10 mM Tris/Cl pH 7.5, 150 mM NaCl, 0.5 mM EDTA, 0.1 % SDS, 1 % Triton™ X-100, 1 % deoxycholate (adjust the pH at +4°C) |
| Dilution Buffer | 10 mM Tris/Cl pH 7.5, 150 mM NaCl, 0.5 mM EDTA (adjust the pH at +4°C) |
| Wash Buffer | 10 mM Tris/Cl pH 7.5, 150 mM NaCl, 0.05 % Nonidet™ P40 Substitute, 0.5 mM EDTA (adjust the pH at +4°C) |
| 2x SDS-sample buffer | 120 mM Tris/Cl pH 6.8, 20 % glycerol, 4 % SDS, 0.04 % bromophenol blue, 10 % β- mercaptoethanol |
| Acidic elution buffer | 200 mM glycine pH 2.5 (adjust the pH at +4°C) |
| Neutralization buffer | 1 M Tris pH 10.4 (adjust the pH at +4°C) |
| Peptide elution buffer | 100 μM (0.12 mg/ml) Strep-peptide (qp-1) reconstituted in PBS |

Note: Use your equivalent cell lysis buffer for other cell types like yeast, plants, insects, bacteria. Consider using a Wash buffer without detergent for Co-IP.

Note: Use Peptide elution buffer for elution under native conditions.

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Product Sizes

| Product | Product Code | Size |
|------------------------|---------------------|---------------|
| Strep-NanoTrap Agarose | qta-10 | 10 reactions |
| | qta-20 | 20 reactions |
| | qta-100 | 100 reactions |
| | qta-200 | 200 reactions |
| | qta-400 | 400 reactions |

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Protocol at a glance

General

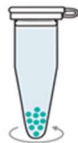
- Perform all steps at 4°C
- Use your preferred cell lysis buffer and cell lysis conditions

Cell Lysis



- Use 10^6 - 10^7 cells and 200 μ L Lysis buffer.
- Perform cell lysis and clear lysate
- Mix 200 μ L cleared lysate with 300 μ L dilution buffer.

Bead Equilibration



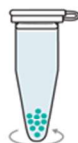
- Transfer 25 μ L bead slurry into a 1.5 mL tube
- Equilibrate beads 3x with 500 μ L dilution buffer

Protein binding



- Add 500 μ L diluted lysate to beads
- Rotate end-over-end for 1 hour at 4°C.

Washing



- Wash beads 3x with 500 μ L wash buffer
- Transfer beads to a new tube during the last washing step

Elution with SDS-sample buffer



- Resuspend beads in 80 μ L 2x SDS-sample buffer
- Boil beads for 5 min at 95°C
- Analyze the supernatant in SDS-PAGE/ Western Blot

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Immunoprecipitation Protocol

Cell Material

The following protocol describes the preparation of a mammalian cell lysate.

For other type of cells, we recommend using 500 µg of cell extract and start the protocol with step Bead equilibration.

Mammalian Cell Lysis

Note: Harvesting of cells and cell lysis should be performed with ice-cold buffers. We strongly recommend adding protease inhibitors to the Lysis buffer to prevent degradation of your target protein and its binding partners.

For one immunoprecipitation reaction, we recommend using $\sim 10^6$ - 10^7 cells.

1. Choice of lysis buffer:
 - a. For cytoplasmic proteins, resuspend the cell pellet in 200 µL ice-cold Lysis buffer by pipetting up and down. Supplement Lysis buffer with protease inhibitor cocktail and 1 mM PMSF (not included).
 - b. For nuclear/chromatin proteins, resuspend cell pellet in 200 µL ice-cold RIPA buffer supplemented with DNase I (f.c. 75-150 Kunitz U/mL), $MgCl_2$ (f.c. 2.5 mM), protease inhibitor cocktail and PMSF (f.c. 1 mM) (not included).
2. Place the tube on ice for 30 min and extensively pipette the suspension every 10 min.
3. Centrifuge cell lysate at 17,000x g for 10 min at +4°C. Transfer cleared lysate (supernatant) to a pre-cooled tube and add 300 µL Dilution buffer supplemented with 1 mM PMSF and protease inhibitor cocktail (not included). If required, save 50 µL of diluted lysate for further analysis (input fraction).

Bead Equilibration

1. Resuspend the beads by gently pipetting them up and down or by inverting the tube. Do not vortex the beads!
2. Transfer 25 µL of bead slurry into a 1.5 mL reaction tube.
3. Add 500 µL ice-cold Dilution buffer.
4. Sediment the beads by centrifugation at 2,500x g for 5 min at +4°C. Discard the supernatant.

Note: Alternatively, ChromoTek Spin columns (sct-10; -20; -50) can be used to equilibrate the beads.

Protein Binding

1. Add diluted lysate to the equilibrated beads.
2. Rotate end-over-end for 1 hour at +4°C.

Washing

1. Sediment the beads by centrifugation at 2,500x g for 5 min at +4°C.

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2. If required, save 50 μ L of supernatant for further analysis (flow-through/non-bound fraction).
3. Discard remaining supernatant.
4. Resuspend beads in 500 μ L Wash buffer.
5. Sediment the beads by centrifugation at 2,500x g for 5 min at +4°C. Discard remaining supernatant.
6. Repeat this step at least twice.
7. During the last washing step, transfer the beads to a new tube.

Optional: To increase stringency of the Wash buffer, test various salt concentrations e.g. 150-500 mM, and/or add a non-ionic detergent e.g. Triton™ X-100 (see Wash buffer compatibility table for maximal concentrations).

Note: Alternatively, ChromoTek Spin columns (sct-10; -20; -50) can be used to wash the beads.

Elution with 2x SDS-sample buffer (Laemmli)

1. Remove the remaining supernatant.
2. Resuspend beads in 80 μ L 2x SDS-sample buffer.
3. Boil beads for 5 min at +95°C to dissociate immunocomplexes from beads.
4. Sediment the beads by centrifugation at 2,500x g for 2 min at +4°C.
5. Analyze the supernatant in SDS-PAGE / Western Blot.

Elution with Acidic Elution Buffer

1. Remove the remaining supernatant.
2. Add 50-100 μ L Acidic elution buffer and constantly pipette up and down for 30-60 sec at +4°C or room temperature.
3. Sediment the beads by centrifugation at 2,500x g for 2 min at +4°C.
4. Transfer the supernatant to a new tube.
5. Immediately neutralize the eluate fraction with 5-10 μ L Neutralization buffer.
6. Repeat this step at least once to increase elution efficiency.

Note: Elution at room temperature is more efficient than elution at +4°C. Prewarm buffers for elution at room temperature.

Elution with Strep-peptide

1. Reconstitute 1 mg Strep-peptide in 8.2 ml PBS, which results in a final concentration of 100 μ M (0.12 mg/ml). Vortex for 1 min to dissolve the powder.
2. Remove the remaining supernatant from the beads.
3. Add 80 μ L Strep-peptide (100 μ M) and mix using a pipette.
4. Incubate at 4-25 °C for 5-10 min under regular pipetting to ensure thorough mixing.
5. Sediment the beads by centrifugation at 2,500x g for 2 min at +4°C.
6. Transfer the supernatant to a new tube.
7. Repeat this step at least once to increase elution efficiency.

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Note: Alternatively, ChromoTek Spin columns (sct-10; -20; -50) can be used to separate the beads.

Related Products

| Product | Code |
|----------------------------|------|
| Strep-Peptide | qp |
| Strep-NanoTrap Agarose Kit | qtak |

Contact

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