

# EPHA3

PDB:2QOK

## Revision

**Revision Type:**created

**Revised by:**created

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**Entry Clone Accession:**epha3.BC063282.OBS.30347891.pBluescript

**Entry Clone Source:**Open Biosystems

**SGC Clone Accession:**epha3.0577-0947.102F05

**Tag:**N-terminal: MGSSHHHHHHSSGLVPRGS

**Host:***E. coli* BL21 (DE3)

## Construct

**Prelude:**

**Sequence:**

MGSSHHHHHHSSGLVPRGSDEKRLHFGNGHLKLPGLRTFVDPHTFEDPTQTVHEFAKELDATNISIDKVVGAGEFGEVCSGRLKLPS  
KKEISVAIKTLKVGYTEKQRRDFLGEASIMGQFDHPNIIRLEGVVTKSKPVMIVTEYMENGSLDSFLRKHDAQFTVIQLVGMLRGIA  
SGMKYLSDMGYVHRDLAARNILINSNLVCKVSDFLARVLEDDPEAAYTTRGGKIPIRWTSPEAIAYRKFTSASDVWSYGIVLWEVM  
SYGERPYWEMSNQDVIKAVDEGYRLPPPMDCPAALYQLMLDCWQKDRNNRPKFEQIVSILDKLIRNPGSLKIITSAAARPSNLLDQ  
SNVDITTFRTTGDWLNQVWTAHCKEIFTGVEYSSCDTIAKIS

**Vector:**pET28a-LIC vector (GenBank, EF442785)

## Growth

**Medium:**Terrific Broth (TB) in the presence of 50 µg/mL of kanamycin

**Antibiotics:**

**Procedure:**Using the SGC's LEX bubbling system, EPHA3 was expressed in *E. coli* BL21 (DE3) grown in growth medium at 37°C to an OD<sub>600</sub> of 7.5. Cells were then induced by isopropyl-1-thio-D-galactopyranoside (IPTG), final concentration 0.1 mM and incubated overnight at 15°C. The culture was centrifuged and the cell pellets were collected and stored at -80°C.

## Purification

**Procedure**

Lysed cells were diluted to 50-100 mL final volume and imidazole added to a final concentration of 10 mM; this was then mixed with 2-3 mL of HisLink resin (Promega V8821) per construct. The mixture is incubated with mixing for at least 20 minutes at 4 °C.

**IMAC purification:** The lysate was spun at 500xg for 3 minutes to pellet the HisLink resin. The lysate was carefully decanted off the resin, and then 50 mL of lysis buffer were added to wash the

resin. The resin was allowed to settle for 5 minutes, then poured off and washed 3 more times with fresh lysis buffer. The washed resin was then loaded onto a gravity column and washed with a column volume of low imidazole buffer. Samples were eluted from the HisLink resin by exposure to 10 mL elution buffer. (His)6-tag cleavage: 1 unit of thrombin (Sigma T9681) per milligram of eluted was stored without shaking, overnight, at 4 °C.

## **Extraction**

### **Procedure**

Frozen cell pellets contained in bags (Beckman 369256) obtained from 2L liters of culture were thawed by soaking in warm water for 5 minutes. Each cell pellet was resuspended in 20 mL lysis buffer and 1 mL Sigma general protease inhibitor (Sigma P2714-1BTL, resuspended according to manufacturer's instructions) and then homogenized using an Ultra-Turrax T8 homogenizer (IKA Works) at maximal setting for 30-60 seconds per pellet. Cell lysis was accomplished by sonication (Virtis408912, Virsonic) on ice with a sonication protocol of 10 sec pulse at half-maximal frequency, 10 second rest, for 6 minutes total sonication time per pellet.

**Concentration:** 20 mg/mL protein

**Ligand**

**MassSpec:**

**Crystallization:** Crystallization conditions: 25% PEG 3350, 0.2M Ammonium Sulfate, 0.1M Hepes, pH 7.5, temperature 298K

**NMR Spectroscopy:**

**Data Collection:**

**Data Processing:**