

Entry clone accession LdBPK_091320.1:MAC055-F01

SGC clone accession LdBPK_091320.1:MAC055-F01:C235018

Tag on

Construct sequence

mhhhhhssggenlyfqgAAPPSTREMOVQLVDSLNRREDGGAFSVDVAEAYPDLRDSYRKICPRP
MNLILMRQRAKEGYTSGSATVYGDVAASLTRLREDIELLVRNCITFNVKVESWVTLAR
SFQAFARRVDDFVLRHAAFLRGTTMGAEVYE

Vector pET15-MHL

Expression host BL21-CodonPlus-RIL

Growth medium TB

Growth method Express plasmid in E. coli BL21-CodonPlus(DE3)-RIL on LB(Luria broth) plate in the presence of carbenicillin(100mg/ml)+chloramphenicol (34 mg/mL). A single colony was inoculated into 25 mL of TB with carbenicillin(100mg/ml)+chloramphenicol (34 mg/mL) in a 50 mL falcon tube and incubated with shaking at 220 rpm overnight at 37 °C. Then the culture was transfer into 1L of TB with carbenicillin(100mg/ml)+chloramphenicol (34 mg/mL), 9ml 0.8M MgSO₄, 180ul trace element and 0.5 mL of antifoam (Sigma) in a 1 L bottle and cultured using the LEX system to an OD600 of ~5, cooled to 15 °C, and induced with 0.5 mM isopropyl-1-thio-D-galactopyranoside (IPTG) overnight at 15 °C

Extraction buffers Binding Buffer: 50 mM HEPES pH 7.5, 500 mM NaCl, 5 mM imidazole, and 5 % glycerol

Extraction procedure The culture was harvested by centrifugation. Pellets from 1 L of culture were resuspended to approximately 40 mL/L of cell culture in Binding Buffer with the addition of protease inhibitors (1 mM benzamidine and 1 mM phenylmethyl sulfonyl fluoride (PMSF)). Resuspended pellets stored at -80oC were thawed overnight at 4 °C on the day before purification. Prior to lysis, each pellet from 1 L of culture was pretreated with protease inhibitors, 0.5% CHAPS and 500 units of benzonase. Each liter of cells were sonicated for effective time 5 minutes(about 120 watts, pulsed 10s on, 10s off) and the cell lysate was centrifuged using a Beckman JA-25.25 rotor at 24,000 rpms for 30 minutes at 10 °C

Purification buffers Wash Buffer: 50 mM HEPES pH 7.5, 500 mM NaCl, 30 mM imidazole, and 5 % glycerol

Elution Buffer: 50 mM HEPES pH 7.5, 500 mM NaCl, 250 mM imidazole, and 5 % glycerol

Gel Filtration buffer: 20mM HEPES7.5 and 150 mM NaCl.

Purification procedure The cleared lysate was loaded onto a 2 mL Ni-NTA (Qiagen) column pre-equilibrated with Binding Buffer at approximately 1 – 1.5 mL/min. After the lysate was loaded, the column was then washed with at least 200 mL of Wash Buffer. After washing, the protein was eluted with 15 mL of Elution Buffer and treated with 1mM TCEP.

The sample was then loaded onto a superdex 200 gel filtration column. The eluted protein was concentrated using a 15 mL Amicon Ultra centrifugal filter device (Millipore) with a 10 kDa cutoff. The protein was concentrated to 9 mg/mL and flash frozen in N₂(l) and stored at -80C.

Protein stock concentration protein concentration: 9mg/ml in 20mM HEPES7.5 and 150 mM NaCl.

Crystallization The protein was crystallized at 293 K with 1% w/v Tryptone, 0.001 M Sodium azide, 0.05 M HEPES sodium pH 7.0, 12% w/v Polyethylene glycol 3,350 with Bromosporine using the sitting drop method.