APL917Hu02 50μg
Active Semaphorin 3A (SEMA3A)
Organism Species: Homo sapiens (Human)
Instruction manual

FOR IN VITRO USE AND RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1st Edition (Apr, 2016)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Arg31~Cys141
Tags: N-terminal His-tag
Purity: >92%
Buffer Formulation: 20mM Tris, 150mM NaCl, pH8.0, containing 1mM EDTA, 1mM DTT, 0.01% sarcosyl, 5%Trehalose and Proclin300.
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 8.9
Predicted Molecular Mass: 16.6kDa
Accurate Molecular Mass: 16kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in 20mM Tris, 150mM NaCl (pH8.0) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.
Store at 2-8°C for one month.
Aliquot and store at -80°C for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

RLKLSYKEML ESNNVITFNG
LANSSSYHTF LLDEERSRLY VGAKDHIFSF DLVNIKDFQK IVWPVSYTRR
DECKWAGKDI LKECANFIKV LKAYNQTHLY ACGTGAFHPI C

[ACTIVITY]

The Semaphorin 3A (SEMA3A) which belongs to the semaphorin family can function as either a chemorepulsive agent, inhibiting axonal outgrowth, or as a chemoattractive agent, stimulating the growth of apical dendrites. In both cases, the protein is vital for normal neuronal pattern development. Semaphorin 3A is secreted protein containing a Sema domain, an immunoglobulin C2-like domain and a basic domain near the carboxyl tail. It can be secreted by neurons and surrounding tissue to guide migrating cells and axons in the developing nervous system. Besides, Neuropilin 1 (NRP1) has been identified as an interactor of SEMA3A, thus a binding ELISA assay was conducted to detect the interaction of recombinant human SEMA3A and recombinant human NRP1. Briefly, SEMA3A were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100uL were then transferred to NRP1-coated microtiter wells and incubated for 2h at 37℃. Wells were washed with PBST and incubated for 1h with anti-SEMA3A pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50μL stop solution to the wells and read at 450nm immediately. The binding activity of SEMA3A and NRP1 was shown in Figure 1, and this effect was in a dose dependent manner.

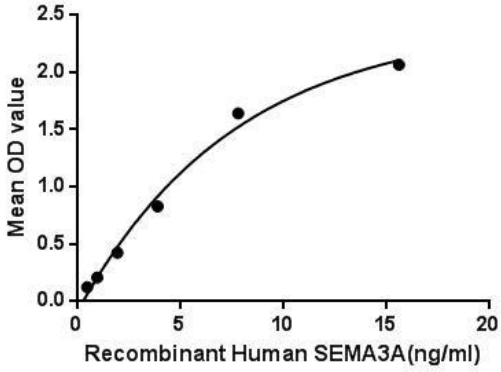

Figure 1. The binding activity of SEMA3A with NRP1.

[IDENTIFICATION]

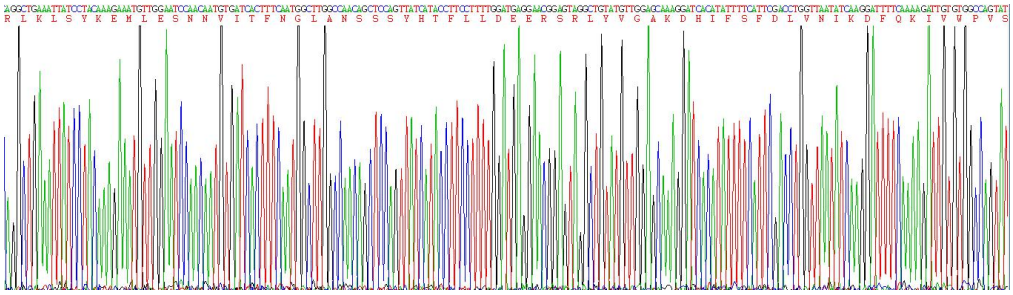

Figure 2. Gene Sequencing (extract)

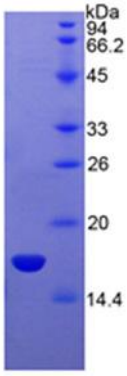

Figure 3. SDS-PAGE

Sample: Active recombinant SEMA3A, Human

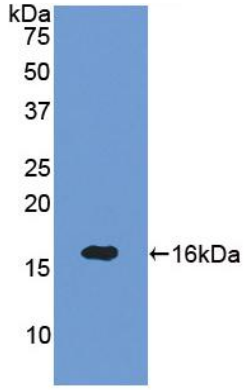

Figure 4. Western Blot

Sample: Recombinant SEMA3A, Human;

Antibody: Rabbit Anti-Human SEMA3A Ab (PAL917Hu02)