

Stac2-U-domain peptide

Quality Control Certificate of Analysis

Catalogue No.: P010-700

Unit Size: 1 mg

Lot no.: 642xxx

Description

Stac2-U-domain peptide is a 22-residue synthetic peptide that inhibits the Ca²⁺-dependent inactivation of Cav1.2 (cardiac L-type Ca²⁺-channel, dihydropyridine receptor), Cav1.3s and Cav1.4(43) (1). This results in an elongated action potential, and recapitulates features of longQT syndrome in ventricular myocytes from guinea pig (1). The peptide is derived from the sequence of human STAC2, which is expressed in the heart, delivers the longQT-like phenotype when presented to the cytoplasm of cardiac myocytes. The peptide in this preparation is NOT cell permeable. It can be presented to the cytoplasm of cells by micro-injection, through a whole cell patch pipette, or incubation with intact cells in the presence of polymer PP-50 (P010-100).

Delivery via whole cell patch involved loading the patch pipette with Stac2-U-domain peptide at 500 µM. This product would make ~0.8 mL @ 500 µM.

- 1) Niu et al. (2019) Allosteric regulators selectively prevent Ca²⁺-feedback of Cav and Nav channels eLife 2018;7:e35222 doi: 10.7554/eLife.35222

Quantity supplied

1 mg solid

Peptide name

Stac2-U-domain Peptide

Peptide sequence

Ac-₂₀₀KVDPVYETLRYGTSLALMNRSS₂₂₁-NH₂

N-terminus

Acetyl-

C-terminus

Amide

Counter ions

Trifluoroacetate (TFA)

Molecular weight

2541.9

Purity

>98% (by HPLC)

HPLC analysis

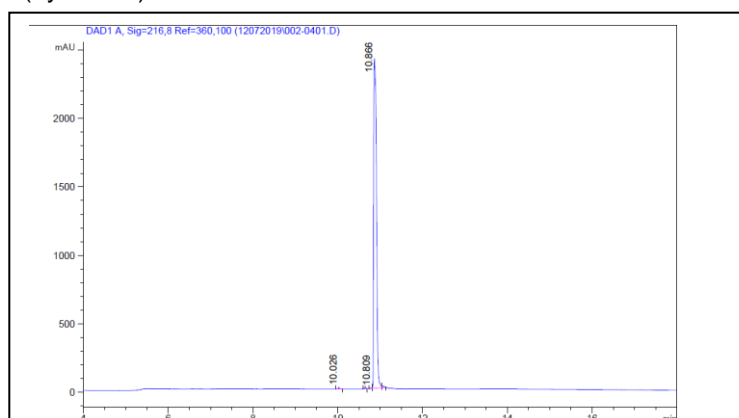


Image: HPLC analysis of Stac2-U-domain Peptide. Analysis carried out at 60°C using 100Å 4.6 x 150mm XB-C18 reverse phase column, gradient from 0%-80% acetonitrile, in 15 minutes. Dissolved in DMSO. Purity determined as 99%.

MS analysis

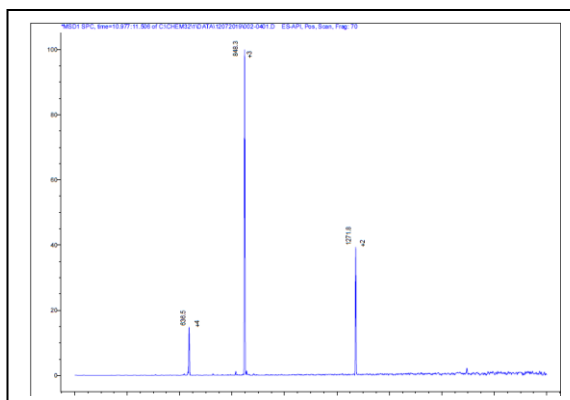


Image: MS Analysis of Stac2-U-domain peptide. Molecular ion predicted: 3016.57 observed: 2540.6 ([M+3H]). The range of molecular ions observed is due to the various multiply charged forms of the peptide (+2, +3, +4).

Appearance

Lyophilised off-white solid

Solubilisation

Dimethyl sulfoxide (DMSO), use minimum volume (10 µL) plus water to desired volume and peptide concentration.

Storage

Store desiccated at -20°C for up to 1 year in solid form. Dissolve in DMSO immediately before use in experiments. Stability in solution not known.

Notes

The product was purified in acetonitrile and water containing 0.1% trifluoroacetic acid (TFA) prior to lyophilisation. The product will therefore be present as its trifluoroacetic acid salt.

* Whilst the purity of the material has been shown to be >98%, the net peptide content (NPC) is lower due to counterions and residual water molecules present in the material after purification.