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Print Date: Apr 20th 2020

Certificate of Analysis

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Product Name: **Davunetide** **Catalog No.: 6779** **Batch No.: 1**

CAS Number: 211439-12-2

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	$C_{36}H_{60}N_{10}O_{12}$
Batch Molecular Weight:	824.93
Physical Appearance:	White lyophilised solid
Net Peptide Content:	82%
Counter Ion:	TFA
Solubility:	Soluble to 1 mg/ml in water
Storage:	Store at -20°C
Peptide Sequence:	Asn-Ala-Pro-Val-Ser-Ile-Pro-Gln

2. ANALYTICAL DATA

HPLC:	Shows 98% purity
Mass Spectrum:	Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala	1.00	0.96	Lys		
Arg			Met		
Asx	1.00	1.00	Phe		
Cys			Pro	2.00	2.03
Glx	1.00	1.04	Ser	1.00	0.98
Gly			Thr		
His			Trp		
Ile	1.00	1.00	Tyr		
Leu			Val	1.00	0.99

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Product Name: **Davunetide** **Catalog No.: 6779** **Batch No.: 1**

CAS Number: 211439-12-2

Description:

Highly potent active component of activity-dependent neuroprotective protein (ADNP). Prevents β-amyloid aggregation. Reduces hyperphosphorylated tau levels and increases tau-microtubule interactions; neuroprotective at femtomolar concentrations in vitro. Exerts neuroprotective effects in schizophrenia models associated with microtubule-autophagy insufficiency in MAP6-deficient mice. Modulates HIFs and VEGF expression and suppresses retinal cell apoptosis in an in vivo diabetic retinopathy model.

Physical and Chemical Properties:

Batch Molecular Formula: $C_{36}H_{60}N_{10}O_{12}$

Batch Molecular Weight: 824.93

Physical Appearance: White lyophilised solid

Peptide Sequence:

Asn-Ala-Pro-Val-Ser-Ile-Pro-Gln

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Net Peptide Content: 82% (Remaining weight made up of counterions and residual water).

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such Cys, Met,Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

References:

D'Amico *et al* (2018) NAP counteracts hyperglycemia/hypoxia induced retinal pigment epithelial barrier breakdown through modulation of HIFs and VEGF expression. J.Cell Physiol. ***233*** 1120. PMID: 28436035.

Ivashko-Pachima *et al* (2017) ADNP/NAP dramatically increase microtubule end-binding protein-Tau interaction: a novel avenue for protection against tauopathy. Mol Psychiatry ***22*** 1335. PMID: 28115743.

Melo *et al* (2017) Impairment of mitochondria dynamics by human A53T α-synuclein and rescue by NAP (davunetide) in a cell model for Parkinson's disease. Exp.Brain Res. ***235*** 731. PMID: 27866262.

Sragovich *et al* (2017) ADNP Plays a Key Role in Autophagy: From Autism to Schizophrenia and Alzheimer's Disease. Bioessays ***39*** doi: 10.1002. PMID: 28940660.

Gozes *et al* (2000) Activity-dependent neurotrophic factor: intranasal administration of femtomolar-acting peptides improve performance in a water maze J.Pharmacol.Exp.Ther. ***293*** 1091. PMID: 10869414.

Bassan *et al* (1999) Complete sequence of a novel protein containing a femtomolar-activity-dependent neuroprotective peptide. J.Neurochem. ***72*** 1283. PMID: 10037502.