# ADWX-1

**Product name**: ADWX-1  
**Synonyms**:  
**Catalog #**: 13ADW001

## Product description

ADWX-1 is an optimised synthetic analog of the scorpion peptide BmKTx. ADWX-1 is known to block voltage-gated K\(_{\text{v}1.3}\) channel with a high affinity (I\(_{\text{C}50}\) = 1.89 pM) and selectivity (340 fold greater affinity than for voltage-dependent ). ADWX-1 inhibits CD4\(^+\) CCR7\(^-\) T-cell proliferation. ADWX-1 is an interesting therapeutic candidate to treat auto-immune disorders such as multiple sclerosis, type-1 diabetes, rheumatoid arthritis and psoriasis. This peptide is a valuable tool for studying the structure-function of K\(_{\text{v}1.3}\) channel and auto-immunity pathways.

## Product specifications

**AA sequence**: Val-Gly-Ile-Asn-Val-Lys-Arg-Gln-Cys\(^7\)-Lys-His-Ser-Arg-Gln-Cys\(^{13}\)-Leu-Lys-Pro-Cys\(^{17}\)-Lys-Asp-Ala-Gly-Met-Arg-Phe-Gly-Lys-Cys\(^{27}\)-Thr-Asn-Gly-Lys-Cys\(^{33}\)-His-Cys\(^{34}\)-Thr-Pro-Lys-OH  
**Disulfide bonds**: Cys\(^7\)-Cys\(^{27}\), Cys\(^{13}\)-Cys\(^{33}\), Cys\(^{17}\)-Cys\(^{34}\)  
**Length (aa)**: 37  
**Formula**: C\(_{169}\)H\(_{281}\)N\(_{57}\)O\(_{46}\)S\(_7\)  
**Appearance**: White lyophilized solid  
**Molecular Weight**: 4071.90 Da  
**CAS number**:  
**Source**: Synthetic  
**Counterion**: TFA salts  
**Solubility**: Water or saline buffer, 5 mg/mL maximum (recommendation)

## Formulation

**Storage/Stability**: Shipped at ambient temperature under lyophilized powder. Store at -20°C (-4°F). Do not freeze-thaw. Aliquot sample if required and store at -80°C (-112°F).  
**Expiry date**: One year  
**Use restrictions**: For laboratory use only. Not for drug, household or other uses. Not for use in diagnostic or therapeutic procedures.

## Related products

- **Kaliotoxin 1 - #08KTX002**: potent inhibitor of K\(_{\text{v}1.1}\), K\(_{\text{v}1.2}\), K\(_{\text{v}1.3}\) channels  
- **Margatoxin - #08MAG001**: selective inhibitor of K\(_{\text{v}1.3}\)  
- **HsTx1 - #08NEU001**: inhibits K\(_{\text{v}1.3}\) with a Kd close to 10pM  
- **Maurotoxin - #08MAR001**: inhibits voltage-gated potassium channels and small conductance calcium-activated channels  
- **ShK - #08SHK001**: inhibits potently K\(_{\text{v}1.1}\), K\(_{\text{v}1.3}\) and K\(_{\text{v}1.4}\) channels  
- **(Dap\(^{22}\))\(-ShK - #13SHD001**: selective blocker of the voltage-gated potassium channel K\(_{\text{v}1.3}\) (IC\(_{50}\) ~ 23 pM)

## References

- Song Han , et al. (2008) Structural Basis of a Potent Peptide Inhibitor Designed for Kv1.3 Channel, a Therapeutic Target of Autoimmune Disease. *JBC*  
- Zhi Li, et al.(2012) Selective Inhibition of CCR7– Effector Memory T Cell Activation by a Novel Peptide Targeting Kv1.3 Channel in a Rat Experimental Autoimmune Encephalomyelitis Model. *JBC*  
- Yin SJ (2008) Different residues in channel turret determining the selectivity of ADWX-1 inhibitor peptide between Kv1.1 and Kv1.3 channels. *Journal of proteome research*

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**For laboratory research use only**