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## Product Data Sheet

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Product Name: Huwentoxin XVI  
Cat. No.: GC18027

### Chemical Properties

Cas. No. 1600543-88-1

SMILES CCC(C(/N=C(O)/C(N)CSSCC(/N=C(O)/C(N=C(O)C(N=C(O)C1CCCN12)CCCNC(N)=N)CSSCC(/N=C(O)/C(/N=C(O)/C(/N=C(O)/C(/N=C(O))

Formula C<sub>196</sub>H<sub>292</sub>N<sub>50</sub>O<sub>56</sub>S<sub>6</sub>

Solubility Soluble to 1 mg/ml in Water

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

### Background

Huwentoxin XVI (HWTX-XVI) is composed of 39 amino acid residues including six cysteines. HWTX-XVI is a novel neurotoxin from the venom of Chinese tarantula *O. huwena*. and specifically block N-type calcium channels. [1]

N-type calcium channels are often highly expressed both in dorsal root ganglia cell bodies and in the synaptic terminals projecting to dorsal horn of the spinal cord N-type calcium channels play important roles in the control of neurotransmission release and transmission of pain signals to the central nervous system.[2]

Electrophysiological assay indicated that HWTX-XVI specifically inhibited N-type calcium channels in rat dorsal root ganglion cells. HWTX-XVI specifically inhibits GVIA sensitive, N-type calcium channels in rat DRG cells.[1]

HWTX-XVI could almost completely block the twitch response of rat vas deferens to low-frequency electrical stimulation. HWTX-XVI 's analgesic effects, non-toxic and complete reversibility make it an interesting tool for developing novel drugs for the treatment of N-type calcium channel-related diseases.[1,2]

### References:

[1] Deng M, Luo X, Xiao Y et al. , Huwentoxin-XVI, an analgesic, highly reversible mammalian N-type calcium channel antagonist from Chinese tarantula *Ornithoctonus huwena*. *Neuropharmacology*. 2014 Apr;79:657-67.

[2] Liu Z, Dai J, Dai L et al. , Function and solution structure of Huwentoxin-X, a specific blocker of N-type calcium channels, from the Chinese bird spider *Ornithoctonus huwena*. *J Biol Chem*. 2006 Mar 31;281(13):8628-35.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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