



Molecular Tools for the Life Science Community

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## Certificate of Analysis

PRODUCT # RTC-250

LOT # RT-001

### $\omega$ -Conotoxin CVIA

(*Conus catus*)

M.W.: 2643 daltons.<sup>1</sup>  
Sequence: CKSTGASCRRTSYDCCTGSCRSGRG  
Purity: > 98% by HPLC.  
Solubility: Any aqueous buffer.

#### Preparation:

$\omega$ -Conotoxin CVIA is a recombinant peptide expressed in and extracted from *E. coli* and purified to homogeneity.

#### Reconstitution:

The peptide concentration and identification were determined by amino acid analysis. Each vial contains 0.1 mg, 0.5 mg or 1 mg of unbuffered peptide. Dissolving of 0.1 mg in 37.8 ml of any conventional buffer gives a stock solution of 1  $\mu$ M.

#### Storage and Stability:

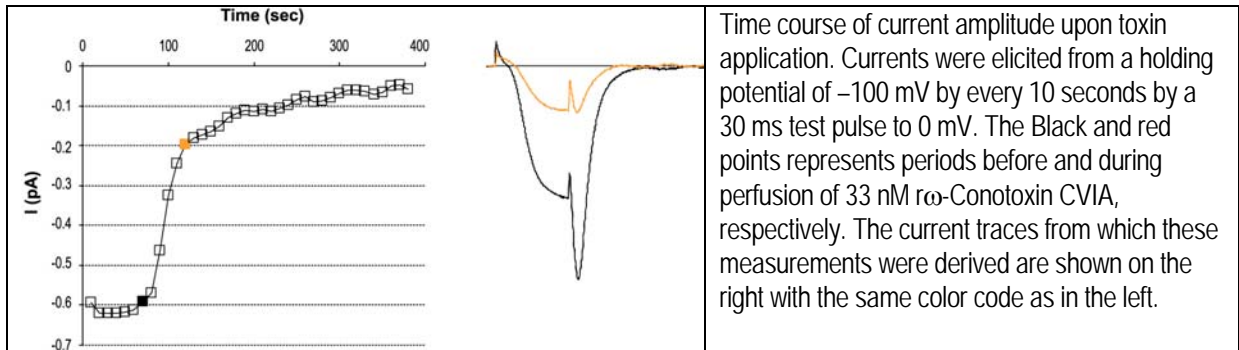
Lyophilized form: 3 weeks at room temperature.  
One year -20°C.  
Liquid form: Up to one week at 4°C.  
Three months at -20°C.

#### Known action:

$\omega$ -Conotoxin CVIA acts at the presynaptic membranes, where it binds and displaces <sup>125</sup>I  $\omega$ -Conotoxin GVIA the voltage-sensitive Ca<sup>2+</sup> channel (VSCC), mainly the N-type Ca<sup>2+</sup> channels (Ca<sub>v</sub>2.2/CACNA1B) with an IC<sub>50</sub> of 0.5nM. Furthermore,  $\omega$ -Conotoxin CVIA inhibited contractions of electrically stimulated rat *vas deferens* with an IC<sub>50</sub> of 205nM.<sup>1</sup>

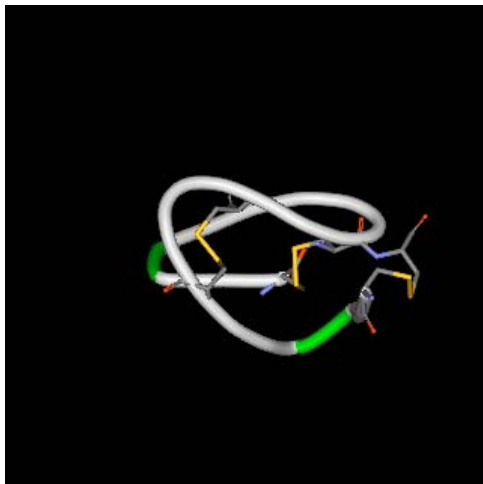
### Bioassay:

The activity of this lot was tested using two-electrode voltage clamp recording from *Xenopus* oocytes expressing  $Ca_v2.2$  channels. Recombinant  $\omega$ -Conotoxin CVIA inhibited N-type  $Ca_v$  currents in *Xenopus* oocytes injected with RNA encoding the  $Ca_v2.2$  and  $\beta 2a$  subunits by 33 nM recombinant  $\omega$ -Conotoxin CVIA.



### References:

1. Lewis, R.J. *et al.* (2000) *J. Biol. Chem.* **275**, 35335.
2. Peitsch, M.C. (1996) *Biochem. Soc. Trans.* **24**, 274.



Model structure of  $\omega$ -Conotoxin CVIA, based on its homology to  $\omega$ -Conotoxin MVIIA (1feo.pdb).<sup>2</sup>