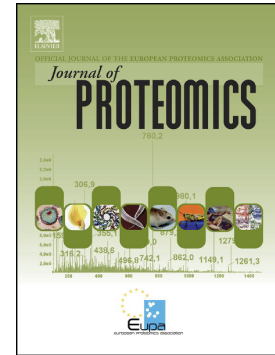


Accepted Manuscript

Isolation and characterization of Conohyal-P1, a hyaluronidase from the injected venom of *Conus purpurascens*

Carolina Möller, Evan Clark, Helena Safavi-Hemani, Anthony DeCaprio, Frank Marí



PII: S1874-3919(17)30162-8
DOI: doi: [10.1016/j.jprot.2017.05.002](https://doi.org/10.1016/j.jprot.2017.05.002)
Reference: JPROT 2841

To appear in: *Journal of Proteomics*

Received date: 13 February 2017
Revised date: 13 April 2017
Accepted date: 2 May 2017

Please cite this article as: Carolina Möller, Evan Clark, Helena Safavi-Hemani, Anthony DeCaprio, Frank Marí, Isolation and characterization of Conohyal-P1, a hyaluronidase from the injected venom of *Conus purpurascens*, *Journal of Proteomics* (2016), doi: [10.1016/j.jprot.2017.05.002](https://doi.org/10.1016/j.jprot.2017.05.002)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Isolation and characterization of Conohyal-P1, a hyaluronidase from the injected venom of *Conus purpurascens*

Carolina Möller^{1,2}, Evan Clark³, Helena Safavi-Hemani⁴, Anthony DeCaprio², Frank Mari^{*1,3}

¹Marine Biochemical Sciences, Chemical Sciences Division, National Institute of Standards and Technology, 331 Fort Johnson Road, Charleston, SC, 29412, USA; ²Department of Chemistry and Biochemistry, Florida International University, SW 8th St, Miami, FL, 33119; ³Department of Chemistry and Biochemistry, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431-0991, USA; ⁴Department of Biology, University of Utah, Salt Lake City, UT, 84112.

Keywords: hyaluronidases, cones snails, venom, venomics, enzymatic activity

Running title: Conohyal-P1, a novel hyaluronidase

Abstract

Hyaluronidases are ubiquitous enzymes commonly found in venom and their main function is to degrade hyaluran, which is the major glycosaminoglycan of the extracellular matrix in animal tissues. Here we describe the purification and characterization of a 60 kDa hyaluronidase found in the injected venom from *Conus purpurascens*, Conohyal-P1. Using a combined strategy based on transcriptomic and proteomic analysis, we determined the Conohyal-P1 sequence. Conohyal-P1 has conserved consensus catalytic and positioning domain residues characteristic of hyaluronidases and a C-terminus EGF-like domain. Additionally, the enzyme is expressed as a mixture of glycosylated isoforms at five asparagine sites. The activity of the native Conohyal-P1 was assessed by MS-based methods and confirmed by classical turbidimetric methods. The MS-based assay is particularly sensitive and provides the first detailed analysis of a venom hyaluronidase activity monitored with this method. The discovery of new hyaluronidases and the development of techniques to evaluate their performance can advance

Download English Version:

<https://daneshyari.com/en/article/5138492>

Download Persian Version:

<https://daneshyari.com/article/5138492>

[Daneshyari.com](https://daneshyari.com)