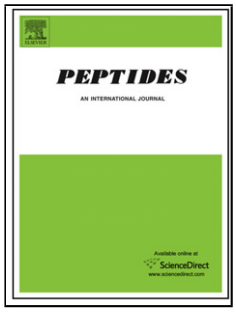
Accepted Manuscript



Title: LmrBPP9: a synthetic bradykinin-potentiating peptide from *Lachesis muta rhombeata* venom that inhibits the angiotensin-converting enzyme activity in vitro and reduces the blood pressure of hypertensive rats

Authors: Ernesto Lopes Pinheiro Júnior, Johara Boldrini-França, Luciana Mattoso Pires de Campos Araújo, Norival Alves Santos-Filho, Lusiane Maria Bendhack, Eduardo Maffud Cilli, Eliane Candiani Arantes

PII: S0196-9781(18)30023-8
DOI: https://doi.org/10.1016/j.peptides.2018.01.015
Reference: PEP 69920

To appear in: *Peptides*

Received date: 6-11-2017
Revised date: 12-1-2018
Accepted date: 30-1-2018

Please cite this article as: Pinheiro Ernesto Lopes, Boldrini-França Johara, de Campos Araújo Luciana Mattoso Pires, Santos-Filho Norival Alves, Bendhack Lusiane Maria, Cilli Eduardo Maffud, Arantes Eliane Candiani.LmrBPP9: a synthetic bradykinin-potentiating peptide from Lachesis muta rhombeata venom that inhibits the angiotensin-converting enzyme activity in vitro and reduces the blood pressure of hypertensive rats.*Peptides* https://doi.org/10.1016/j.peptides.2018.01.015

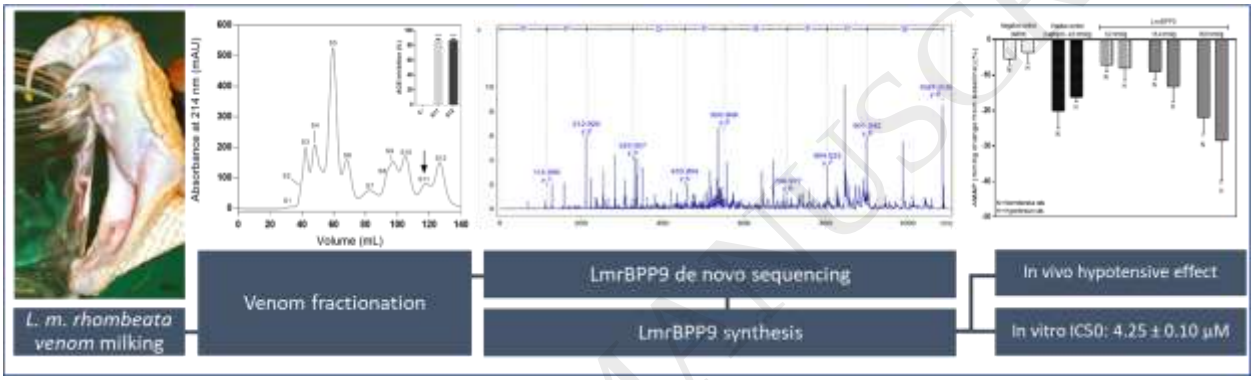
This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please 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.

ACCEPTED MANUSCRIPT

LmrBPP9: a synthetic bradykinin-potentiating peptide from *Lachesis muta rhombeata* venom that inhibits the angiotensin-converting enzyme activity in vitro and reduces the blood pressure of hypertensive rats

Ernesto Lopes Pinheiro Júnior[1], Johara Boldrini-França[1], Luciana Mattoso Pires de Campos Araújo[1], Norival Alves Santos-Filho[2], Lusiane Maria Bendhack[1], Eduardo Maffud Cilli[2], Eliane Candiani Arantes[1]
[1]School of Pharmaceutical Sciences of Ribeirão Preto (FCFRP), University of São Paulo, Ribeirão Preto, SP, Brazil.
[2]Chemistry Institute, São Paulo State University, Araraquara, SP, Brazil.

Graphical abstract



Highlights

- *Lachesis muta rhombeata* venom has several compounds with ACE-inhibitory activity.
- BPPs may play a key role in the envenoming by this species.
- LmrBPP9 presents ACE-inhibition activity in vitro.
- LmrBPP9 shows hypotensive effect in hypertensive 2K1C rats.
- LmrBPP9 has a potential to be a model for the development of new hypotensive drugs.

Abstract

Bradykinin-potentiating peptides (BPPs) are an important group of toxins present in *Lachesis muta rhombeata* venom. They act directly at renin-angiotensin-aldosterone system, through the inhibition of angiotensin-converting enzyme (ACE). This action may contribute to the hypotensive shock observed during the envenoming by this species. Thus, the main goal of this study was the solid-phase synthesis of a BPP found in *L. m. rhombeata* venom and its in vitro and in vivo characterization in relation to ACE inhibition and hypotensive activity, respectively. The LmrBPP9 peptide was synthesized using an automated solid-phase peptide synthesizer and purified by reversed-phase fast protein liquid chromatography (FPLC). The in vitro IC50 of the synthetic peptide is 4.25 ± 0.10 µM, showing a great

Download English Version:

https://daneshyari.com/en/article/8347344

Download Persian Version:

https://daneshyari.com/article/8347344

Daneshyari.com