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*The Director*

*of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

*Therefore, this United States*

**Patent**

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*Andrew Kanner*

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE



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(12) **United States Patent**  
**Rezvani et al.**

(10) **Patent No.:** **US 10,517,919 B2**

(45) **Date of Patent:** **Dec. 31, 2019**

(54) **SELECTIVE NOX-1 INHIBITOR PEPTIDES AND USES THEREOF**

(58) **Field of Classification Search**

None

See application file for complete search history.

(71) Applicants: **UNIVERSITE DE BORDEAUX**,  
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(56) **References Cited**

U.S. PATENT DOCUMENTS

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 42 days.

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(22) Filed: **Aug. 3, 2017**

Altenhofer et al., 2015, "Evolution of NADPH Oxidase Inhibitors: Selectivity and Mechanisms for Target Engagement", *Antioxidants & Redox Signaling*, 23(5):406-427.

(65) **Prior Publication Data**

US 2017/0340697 A1 Nov. 30, 2017

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**Related U.S. Application Data**

(63) Continuation of application No. 14/758,991, filed as application No. PCT/EP2014/050063 on Jan. 3, 2014, now abandoned.

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(30) **Foreign Application Priority Data**

Jan. 3, 2013 (EP) ..... 13150187

(57) **ABSTRACT**

(51) **Int. Cl.**

**A61K 38/08** (2019.01)

**A61K 38/00** (2006.01)

(Continued)

The present invention relates to novel peptides, compositions and methods for the prevention and/or treatment of pathological conditions and diseases associated with NADPH oxidase 1 (Nox1) activity, and/or increased reactive oxygen species (ROS) production. The novel peptides are thus particularly useful for treating and/or preventing cancer, atherosclerosis, angiogenesis, and aging.

(52) **U.S. Cl.**

CPC ..... **A61K 38/08** (2013.01); **A61K 8/64** (2013.01); **A61K 38/005** (2013.01); **A61K 38/44** (2013.01);

(Continued)

**14 Claims, 16 Drawing Sheets**

**Specification includes a Sequence Listing.**

	<b>Sequences</b>
<b>Control peptide 1 (SEQ ID NO : 57) (scramble)</b>	<b>RKK RRQ RRR VTP TRP PSR</b>
<b>Peptide A (+tat) (SEQ ID NO : 41)</b>	<b>RKK RRQ RRR PPT VPT RPS</b>
<b>Peptide A (-tat) (SEQ ID NO : 20)</b>	<b>PPT VPT RPS</b>
<b>P8: Shorter peptide A (-tat) (SEQ ID NO : 56)</b>	<b>PPT VPT RP</b>
<b>P7: Shorter peptide A (-tat) (SEQ ID NO : 2)</b>	<b>PPT VPT R</b>