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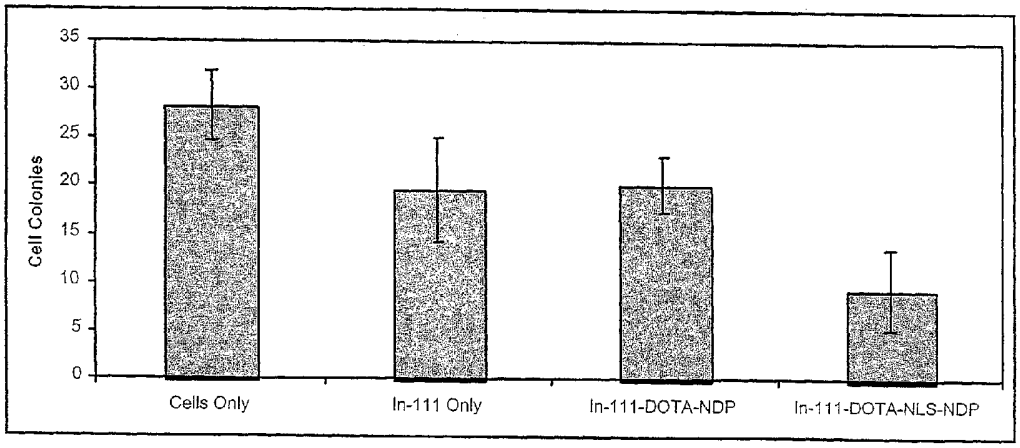
(54) Title: PEPTIDES DELIVERED TO CELL NUCLEI



(57) Abstract: The present invention provides peptides that selectively target the nuclei of cells. The peptides are useful for nuclear localization of radioisotopes, therapeutics, and imaging agents. The peptides are useful for *in vitro* as well as *in vivo* applications. The present invention also provides methods of targeting and imaging cell nuclei, and methods to treat diseases using such peptides.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
C07K7/08 C07K14/00 A61K47/48 A61K31/08 C12N5/10
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C07K C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, BIOSIS, EMBASE, WPI Data, PAJ, CHEM ABS Data, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROSENKRANZ ANDREY A ET AL: "Recombinant modular transporters for cell-specific nuclear delivery of locally acting drugs enhance photosensitizer activity." FASEB JOURNAL, vol. 17, no. 9, June 2003 (2003-06), pages 1121-1123 URL, XP002364149 ISSN: 0892-6638 page 1121, left-hand column, last paragraph - right-hand column, paragraph FIRS; figures 1-3 page 1123, right-hand column ----- -/---	1-84

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROSENKRANZ A A ET AL: "Targeted intracellular site-specific drug delivery: Photosensitizer targeting to melanoma cell nuclei." GENETIKA, vol. 39, no. 2, February 2003 (2003-02), pages 259-268, XP009060136 ISSN: 0016-6758 abstract	1-84
X	SOBOLEV A S ET AL: "Approaches to targeted intracellular delivery of photosensitizers in order to enhance their efficacy and cell specificity" BIOFIZIKA, vol. 49, no. 2, March 2004 (2004-03), pages 351-379, XP009060140 ISSN: 0006-3029 page 368, left-hand column, last paragraph - page 371, paragraph 2; figures 4,5	1-84
A	FROIDEVAUX SYLVIE ET AL: "A gallium-labeled DOTA-alpha-melanocyte-stimulating hormone analog for PET imaging of melanoma metastases." JOURNAL OF NUCLEAR MEDICINE, vol. 45, no. 1, January 2004 (2004-01), pages 116-123, XP002364150 ISSN: 0161-5505 abstract page 117, left-hand column, last paragraph - right-hand column, paragraph 1; figure 1 page 120, right-hand column, last paragraph - page 121, left-hand column, paragraph 1	1-84
A	EBERLE A N ET AL: "RADIOLABELED ALPHA-MELANOCYTE-STIMULATING HORMONE ANALOGS FOR RECEPTOR-MEDIATED TARGETING OF MELANOMA: FROM TRITIUM TO INDIUM" JOURNAL OF MOLECULAR RECOGNITION, HEYDEN & SON LTD., LONDON, GB, vol. 16, no. 5, September 2003 (2003-09), pages 248-254, XP008055252 ISSN: 0952-3499 abstract figures 1-3; table 1	1-84

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LOBL T J ET AL: "SV40 LARGE T-ANTIGEN NUCLEAR SIGNAL ANALOGUES: SUCCESSFUL NUCLEAR TARGETING WITH BOVINE SERUM ALBUMIN BUT NOT LOW MOLECULAR WEIGHT FLUORESCENT CONJUGATES" BIOPOLYMERS, NEW YORK, NY, US, vol. 29, 1990, pages 197-203, XP002935519 ISSN: 0006-3525 abstract page 198, left-hand column, last paragraph - right-hand column, paragraph 2	1-84
A	WO 97/34637 A (TRUSTEES OF BOSTON UNIVERSITY; MOHR, SCOTT, C; RAY, RAHUL) 25 September 1997 (1997-09-25) claims page 8, line 4 - page 11, line 25	1-84

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International application No
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