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(54) Title: PUNCTUM: DRUG DELIVERY SITE FOR THERAPEUTIC PEPTIDES AND PROTEINS

(57) Abstract: Disclosed is an alternate route for drug delivery, which involves the punctum. The lacrimal punctum is an opening in the corner of the eye through which tears drain into the nasolacrimal duct, a highly vascularized collection system. Delivering therapeutic peptides or proteins into the punctum allows the drug to "be naturally absorbed into the lacrimal vascularization for systemic distribution into the bloodstream. Since the punctum is a natural opening, this would constitute a painless route for drug administration. In one embodiment, SOD is introduced into the punctum and absorbed intact into the blood stream without antigenic or unwanted allergic reaction. The drug absorption site could start in the punctum and continue on to the canaliculi, lacrimal sac, and nasolacrimal drainage system, to the nasal meatus. Also, diffusion to the highly vascularized choroids may occur due to proximity of the punctum to the lacrimal lake.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/78256

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: A01N 37/18(2006.01);A61K 38/00(2006.01)

USPC: 514/2
 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)
 U.S. : 514/2

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 practicable, search terms used)
 STN (MEDLINE, BIOSIS, DRUGU, EMBASE) and EAST (US-PGPUB, USPAT, JPO, EPO, DERWENT)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,182,258 (CHIOU) 26 January 1993 (26.01.1993). See, e.g., abstract, claims.	1-8, 15-16
Y		9-14, 17-28
Y	US 5,681,811 (EKWURIBE) 28 October 1997 (28.10.1997). See entire document, e.g., abstract.	9-14, 17-28

Further documents are listed in the continuation of Box C. See patent family annex.

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"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	
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