US006753407B2

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

(10) **Patent No.: US 6,753,407 B2**
(45) **Date of Patent: Jun. 22, 2004**

(54) **ANTIMICROBIAL PEPTIDES ISOLATED FROM FISH**

(75) Inventors: **Edward J. Noga**, Raleigh, NC (US); **Umaporn Silphaduang**, Fuquay-Varina, NC (US)

(73) Assignee: **North Carolina State University**, Raleigh, NC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/929,788**

(22) Filed: **Aug. 14, 2001**

(65) **Prior Publication Data**

US 2003/0083247 A1 May 1, 2003

Related U.S. Application Data

(60) Provisional application No. 60/225,354, filed on Aug. 15, 2000.

(51) **Int. Cl.**[7] **A61K 38/00**

(52) **U.S. Cl.** **530/326**; 530/300; 424/184.1; 424/184.5; 514/2; 514/13; 514/21

(58) **Field of Search** 530/300, 326; 424/184.1, 185.1; 514/2, 13, 21

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

WO WO 89/00199 1/1989

WO WO 94/21672 9/1994

OTHER PUBLICATIONS

Robinette, D., et al., *Antimicrobial activity in the skin of the channel catfish Ictalurus punctatus: characterization of broad–spectrum histone–like antimicrobial proteins, CMLS Cellular and Molecular Life Sciences*, vol. 54, pp. 467–475 (1998).

Yu, K., et al., *Relationship between the tertiary structures of mastoparan B and its analogs and their lytic activities studied by NMR spectroscopy, J. Peptide Res.*, vol. 55, pp. 51–62 (2000).

Boman, Hans, *Peptide Antibiotics and Their Role in Innate Immunity, Annual Review of Immunology*, vol. 13, pp. 61–92 (1995).

Silphaduang, et al., *Peptide Antibiotics in Mast Cell of Fish, Nature*, vol. 414, No. 6861, pp. 268–269 (Nov. 15, 2001).

Primary Examiner—Lynette R. F. Smith
Assistant Examiner—Robert A. Zeman
(74) *Attorney, Agent, or Firm*—Myers Bigel Sibley & Sajovec

(57) **ABSTRACT**

Antimicrobial peptides (endobiotic peptides), isolated from fish are described. Such endobiotic peptides may be isolated as 22 amino acid peptides having molecular weights of about 2500 Da from the gills of hybrid striped bass (*Morone saxitilis*×*Morone chrysops*). Antibodies that bind such peptides and methods of using such peptides are also described.

2 Claims, No Drawings