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Lakehurst Dr., Waukegan, IL 60085 (US). **APONTE, Roberto**; 17572 Woodland Dr., Grayslake, IL 60030 (US). **GUPTA, Pramod**; 6986 Bennington Dr., Gurnee, IL 60031 (US).

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(74) Agent: **KATZ, Martin, L.**; Wood, Phillips, Katz, Clark & Mortimer, Citicorp Center, Suite 3800, 500 W. Madison Street, Chicago, IL 60661-2511 (US).

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(71) Applicant: **TAP PHARMACEUTICAL PRODUCTS INC.** [US/US]; 675 North Field Drive, Lake Forest, IL 60045 (US).

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(72) Inventors: **TANEJA, Rajneesh**; 5353 B. David Court, Gurnee, IL 60031 (US). **BRINKER, Dale**; 24452 W. Highview Drive, Antioch, IL 60002 (US). **BRISKIN, Jacqueline**; 1212 S. Wellington Ct., Buffalo Grove, IL 60089 (US). **VISHWASRAO, Dilip**; Apt. #201, 1044

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ENHANCEMENT OF ORAL BIOAVAILABILITY OF NON-EMULSIFIED FORMULATION OF PRODRUG ESTERS WITH LECITHIN

(57) Abstract: A method for enhancing the oral bioavailability of a prodrug ester by formulating the ester as non-emulsified formulation with lecithin; as well as a pharmaceutical composition of at least one antibiotic and lecithin in a non-emulsified formulation; a method of treating infections with the non-emulsified formulation, and a method for preparing tablets by direct compression of blends of drugs with lecithin are disclosed. Non-emulsified formulations include solids, tablets, capsules, lozenges, suspensions, elixirs and solutions, and exclude emulsions, liposomes, lipid matrix systems and micro-emulsions. A suitable prodrug ester is a cephalosporin  $\beta$ -lactam antibiotic such as cefditoren pivoxil, and a suitable non-emulsified formulation is a solid formulation.



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US02/16428

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61K 9/20, 9/14, 31/545

US CL : 514/200; 424/ 464, 489

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. : 514/200; 424/ 464,489

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)  
WEST**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Database JPAB on WEST, ACCESSION NO. 1987-061184, 'Pharmaceutical antifungal composition', JP62016431, 24 January 1987, see abstract.	1,2,4,6-12,14,16-20,24,26,28,29,31,32

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier document published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ALTON PRYOR

Telephone No. (703) 308-1234

# INTERNATIONAL SEARCH REPORT

International application No.  
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## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.