Title: NOVEL HETEROPYRROLE ANALOGS ACTING ON CANNABINOID RECEPTORS

Abstract: Disclosed are biologically active hetero pyrrole analogs such as imidazoles, thiapoles, oxazoles and pyrazoles capable of interacting with the CB1 and/or the CB2 cannabinoid receptors. One aspect discloses hetero pyrrole analogs acting as antagonists for the CB1 and/or the CB2 receptors. Another aspect discloses hetero pyrrole analogs having selectivity for the CB1 or CB2 cannabinoid receptor. Also disclosed are pharmaceutical preparations employing the disclosed anlogs and methods of administering therapeutically effective amounts of the disclosed analogs to provide a physiological effect.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: A61K 31/44(2006.01); C07D 249/08(2006.01)

USPC: 514/383: 548/262.2

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.: 514/383; 548/262.2

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 4,752,900 (WEBER et al) 22 March 1988 (22.03.1988), column 13, lines 34-52.</td>
<td>4</td>
</tr>
<tr>
<td>Y</td>
<td>US 5,155,124 (KIMATA et al) 13 October 1992 (13.10.1992), column 26, lines 1-23.</td>
<td>4</td>
</tr>
<tr>
<td>Y</td>
<td>US 5,208,231 (KIMATA et al) 04 May 1993 (04.05.1993), column 24, lines 35-64.</td>
<td>4</td>
</tr>
</tbody>
</table>

Special categories of cited documents:

- **A**: document defining the general state of the art which is not considered to be of particular relevance
- **E**: earlier application or patent published on or after the international filing date
- **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)
- **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
- **Y**: 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
- **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
- **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, or all, of the documents such combination being obvious to a person skilled in the art
- **K**: document member of the same patent family

**Date of the actual completion of the international search**

20 June 2006 (20.06.2006)

**Date of mailing of the international search report**

26 JUL 2006

**Name and mailing address of the ISA/US**

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Form PCT/ISA/210 (second sheet) (April 2005)
# INTERNATIONAL SEARCH REPORT

**Box No. II**  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search 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.: 1-3 and 5-10
   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:
   Please See Continuation Sheet

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 No. III**  Observations where unity of invention is lacking (Continuation of item 3 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 additional fees, this Authority did not invite payment of any additional fees.

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 and, where applicable, the payment of a protest fee.

□ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

□ No protest accompanied the payment of additional search fees.
Continuation of Box II Reason 2:
The numerous variables, e.g., R1, R2, R3, R4, A, BZ, n, Z1, X1, X2, etc... and their voluminous, complex meanings and their virtual incomprehensible permutations and combinations make it impossible to determine the full scope and complete meaning of the claimed subject matter. As presented, the claimed subject matter cannot be regarded as being a clear and concise description for which protection is sought and as such the listed claims do not comply with the requirements of PCT Article 6. Thus it is impossible to form a meaningful written opinion on these claims. A written opinion will be provided for the first discernable invention, which is Claim 4, limited to compounds containing the same triazole core.