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

(54) Title: NEW TRICYCLIC COMPOUNDS USEFUL FOR THE TREATMENT OF INFLAMMATORY AND ALLERGIC  
DISORDERS: PROCESS FOR THEIR PREPARATION AND PHARMACEUTICAL COMPOSITIONS CONTAINING THEM

(57) Abstract: The present invention relates to novel heterocyclic compounds, their analogs, their tautomers, their regioisomers, their stereoisomers, their enantiomers, their diastereomers, their polymorphs, their pharmaceutically acceptable salts, their appropriate oxides, their pharmaceutically acceptable solvates and their pharmaceutical compositions containing them. The present invention also relates to Phosphodiesterase type 4 (PDE4) inhibitor compounds which down regulate or inhibit the production of TNF- $\alpha$  and therefore are useful in the treatment of variety of allergic and inflammatory diseases including asthma and chronic obstructive pulmonary disease (COPD). The present invention also relates to a process for the preparation of the novel heterocyclic compounds.

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**INTERNATIONAL SEARCH REPORT**

International Application No  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
C07D405/04 A61K31/34	C07D413/14 A61K31/39	C07D401/04 A61P29/00
C07D307/91    A61K31/18		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) C07D    A61K    A61P		
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, PAJ, WPI Data, CHEM ABS Data		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/03377 A (SANKYO COMPANY, LIMITED; BIRDSALL, NIGEL; LAZARENO, SEBASTIAN; NARUTO,) 8 February 1996 (1996-02-08) examples 77,97,137,152,2324 -----	1, 2, 120, 128
X	WO 99/58521 A (AMERICAN HOME PRODUCTS CORPORATION) 18 November 1999 (1999-11-18) RN-No: 25035-04-0, -05-1, -06-2, 07-03, 13-1, -15-3, -17-5, 18-6, 50-6, -64-2, -66-4, -67-5, -71-1, -72-2; RN-No: 250351-24-7, -26-9, 28-1, -30-5, 32-7 ----- -/--	1-3, 120, 129
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <span style="margin-left: 200px;"><input checked="" type="checkbox"/> Patent family members are listed in annex.</span>		
° 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 document but 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		*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 *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 other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
Date of the actual completion of the international search  17 January 2006		Date of mailing of the international search report  03/02/2006
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  Schmid, A

## INTERNATIONAL SEARCH REPORT

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	<p>US 6 110 962 A (WROBEL ET AL)  29 August 2000 (2000-08-29)  RN-No: 250350-04-0, -05-1, -06-2, -07-3,  -13-, 15-3, -17-5, -18-6, -50-6, -24-7,  -14,2, -57-1, -71-1, 72-2;  RN-No: 250351-26-9, -28-1, -30-5, -32-7,  -90-7</p> <p style="text-align: center;">-----</p>	1-3, 120, 129
X	<p>PATENT ABSTRACTS OF JAPAN  vol. 012, no. 216 (P-719),  21 June 1988 (1988-06-21)  &amp; JP 63 014156 A (CANON INC),  21 January 1988 (1988-01-21)  page 537, compound (8)  abstract</p> <p style="text-align: center;">-----</p>	1-3
X	<p>NIELSEN K F ET AL: "Fungal metabolite  screening: database of 474 mycotoxins and  fungal metabolites for dereplication by  standardised liquid chromatography-UV-mass  spectrometry methodology"  JOURNAL OF CHROMATOGRAPHY A, ELSEVIER,  AMSTERDAM, NL,  vol. 1002, no. 1-2,  20 June 2003 (2003-06-20), pages 111-136,  XP004431293  ISSN: 0021-9673  page 120, line 3 ("candidusin C")</p> <p style="text-align: center;">-----</p>	1,2
X	<p>WO 2004/037805 A (GLENMARK PHARMACEUTICALS  LTD; BALASUBRAMANIAN, GOPALAN; GHARAT,  LAXMIK) 6 May 2004 (2004-05-06)  cited in the application  page 1, line 10 - page 1, line 18; claims;  examples</p> <p style="text-align: center;">-----</p>	1-3, 120-129

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB2005/002061

## Box 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:  
  
Although claims 121-129 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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 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 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.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2005/002061

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