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(54) **Title:** USE OF ATP ANALOGUES FOR TREATMENT OF CARDIOVASCULAR DISEASES

(57) **Abstract:** Use of N-alkyl-2-substituted ATP analogues, pharmaceutically acceptable salts, metabolites or prodrugs thereof, for the preparation of a medicament intended to be used in the prevention and/or the treatment of cardiovascular diseases, pharmaceutical compositions comprising such compounds and a method for screening such compounds.



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## INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2005/051856

A. CLASSIFICATION OF SUBJECT MATTER  
 A61K31/663 A61P9/00 G01N33/15

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)

A61P A61K G01N

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, CHEM ABS Data, BIOSIS, EMBASE, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 94/18216 A (ASTRA PHARMA PROD ; INGALL ANTHONY HOWARD (GB); KINDON NICHOLAS DAVID) 18 August 1994 (1994-08-18) cited in the application abstract; claim 6 page 7, lines 4-17; claims 1-6; example 6	1-18
X	CHATTARAJ, SARAT C.: "AR-C69931MX AstraZeneca" CURRENT OPINION IN CARDIOVASCULAR, PULMONARY & RENAL INVESTIGATIONAL DRUGS , 1(5), 600-604 CODEN: CCPRF; ISSN: 1464-8482, 1999, XP008038588 the whole document	1-18

Further documents are listed in the continuation of Box C.

See patent family annex.

\* 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

10 March 2006

Date of mailing of the international search report

22. 03. 2006

Name and mailing address of the ISA/

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## INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2005/051856

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/032618 A1 (DIXON JOHN ET AL) 13 February 2003 (2003-02-13) abstract paragraphs [0018] - [0031]; claims 1-39; examples 1-4	1-18
X	GREENBAUM ADAM B ET AL: "Intravenous adenosine diphosphate P2T platelet receptor antagonism as an adjunct to fibrinolysis for acute myocardial infarction" JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, vol. 39, no. 5 Supplement A, 6 March 2002 (2002-03-06), page 281A, XP008038581 & 51ST ANNUAL SCIENTIFIC SESSION OF THE AMERICAN COLLEGE OF CARDIOLOGY; ATLANTA, GA, USA; MARCH 17-20, 2002 ISSN: 0735-1097 abstract	1-18
X	STOREY R F: "THE P2Y12 RECEPTOR AS A THERAPEUTIC TARGET IN CARDIOVASCULAR DISEASE" PLATELETS (EDINBURGH), CHURCHILL LIVINGSTONE MEDICAL JOURNALS,, GB, vol. 12, no. 4, June 2001 (2001-06), pages 197-209, XP008038598 ISSN: 0953-7104 abstract	1-18
X	STOREY ROBERT F ET AL: "Comparison of the pharmacodynamic effects of the platelet ADP receptor antagonists clopidogrel and AR-C69931MX in patients with ischaemic heart disease." PLATELETS (ABINGDON), vol. 13, no. 7, November 2002 (2002-11), pages 407-413, XP008038590 ISSN: 0953-7104 abstract	1-18
X	STOREY R F ET AL: "INHIBITION OF ADP-INDUCED P-SELECTIN EXPRESSION AND PLATELET-LEUKOCYTE CONJUGATE FORMATION BY CLOPIDOGREL AND THE P2Y12 RECEPTOR ANTAGONIST AR-C69931MX BUT NOT ASPIRIN" THROMBOSIS AND HAEMOSTASIS, STUTTGART, DE, vol. 88, no. 3, 2002, pages 488-494, XP008038611 ISSN: 0340-6245 abstract	1-18

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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	JACOBSSON, FILIP ET AL: "Safety profile and tolerability of intravenous AR-C69931MX, a new antiplatelet drug, in unstable angina pectoris and non-Q-wave myocardial infarction" CLINICAL THERAPEUTICS, 24(5), 752-765 CODEN: CLTHDG; ISSN: 0149-2918, 2002, XP008038584 abstract	1-18
X	MARTEAU F ET AL: "PHARMACOLOGICAL CHARACTERIZATION OF THE HUMAN P2Y13 RECEPTOR" MOLECULAR PHARMACOLOGY, BALTIMORE, MD, US, vol. 64, no. 1, 2003, pages 104-112, XP008038601 ISSN: 0026-895X	1
A	the whole document	19-23
T	JACQUET S ET AL: "The nucleotide receptor P2Y(13) is a key regulator of hepatic high-density lipoprotein (HDL) endocytosis" CELLULAR AND MOLECULAR LIFE SCIENCES, vol. 62, no. 21, November 2005 (2005-11), pages 2508-2515, XP002371465 the whole document	19-23
T	NONAKA ET AL: "Identification of endogenous surrogate ligands for human P2Y12 receptors by in silico and in vitro methods" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ACADEMIC PRESS INC. ORLANDO, FL, US, vol. 337, no. 1, 11 November 2005 (2005-11-11), pages 281-288, XP005093445 ISSN: 0006-291X figure 6; table 1	19-23
P,A	WO 2004/082571 A (BAYER HEALTHCARE AG; GOLZ, STEFAN; BRUEGGEMEIER, ULF; GEERTS, ANDREAS) 30 September 2004 (2004-09-30) page 58, last paragraph - page 59, paragraph 3	19-23

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB2005/051856

## 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:
  
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:

see additional sheet

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.:

1-18

Remark on Protest

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

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

Use of a compound of general formula (I) for the preparation of a medicament for the treatment of a cardiovascular disease including atherosclerosis, intermittent claudication, myocardial infarction, coronary artery disease, coronary heart disease, stable or unstable angina pectoris stroke and/or transient ischemic attack.

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2. claims: 19-23

Method for screening a compound modulating HDL-cholesterol internalization.

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2005/051856

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