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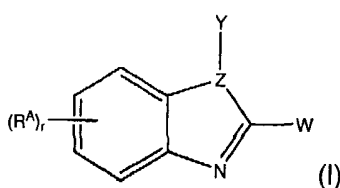
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(54) Title: BENZIMIDAZOLES USEFUL AS MODULATORS OF ION CHANNELS



(57) Abstract: The present invention relates to compounds of Formula I: or a pharmaceutically acceptable salt thereof, wherein the  $R^1$ , Z, Y,  $R^A$ , and W groups of formula I are as defined herein. The invention also provides pharmaceutically acceptable compositions and methods of using the compositions in the treatment of various disorders.



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# INTERNATIONAL SEARCH REPORT

International Application No  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 C07D235/06 C07D235/14 C07D235/18 C07D401/04 C07D403/04 C07D209/14 A61K31/415 A61K31/33		
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) IPC 7 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, BEILSTEIN Data, CHEM ABS Data		
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<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  <div style="text-align: center; font-size: 1.2em;">21 February 2005</div>	Date of mailing of the international search report  <div style="text-align: center; font-size: 1.2em;">30. 05. 2005</div>	
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  <div style="text-align: center; font-size: 1.2em;">Rufet, J</div>	

## INTERNATIONAL SEARCH REPORT

International Application No

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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	DATABASE CROSSFIRE BEILSTEIN BEILSTEIN INSTITUT ZUR FOERDERUNG DER CHEMISCHEN WISSENSCHAFTEN, FRANKFURT AM MAIN, DE; Database-Accession no. 231224 (BRN) XP002317250 abstract & COLLECT. CZECH. CHEM. COMMUN., vol. 15, 1950, pages 196-200, -----	1
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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.
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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	DATABASE CROSSFIRE BEILSTEIN BEILSTEIN INSTITUT ZUR FOERDERUNG DER CHEMISCHEN WISSENSCHAFTEN, FRANKFURT AM MAIN, DE; Database-Accession no. 917933 (BRN) XP002317261 abstract & EUR. J. MED. CHEM. CHIM. THER., vol. 14, 1979, pages 435-438, -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/036297

## 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.: 14-33  
because they relate to subject matter not required to be searched by this Authority, namely:  

Although claims 14-33 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:

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 partly, 2-4, 7, 13-16 partly, 17,18,21-23, 27-33

### 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 partly, 2-4, 7, 13-16 partly, 17, 18, 21-23, 27-33

Provision of compounds according to formula (I) of claim 1 wherein the group -A- of formula (Ia) is represented by the group -T-NH-, useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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2. claims: 1 partly, 5, 13-16 partly, 19

Provision of compounds according to formula (I) of claim 1 wherein the group -A- of formula (Ia) is represented by the second group of the list (after the group -T-NH-), useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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3. claims: 1 partly, 6, 10-12, 13-16 partly, 20, 24-26

Provision of compounds according to formula (I) of claim 1 wherein the group -A- of formula (Ia) is represented by the third group of the list, useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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4. claims: 1, 13-16 all partly

Provision of compounds according to formula (I) of claim 1 wherein the group -A- of formula (Ia) is represented by the fourth group of the list, useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

---

5. claims: 1, 13-16 all partly

Provision of compounds according to formula (I) of claim 1 wherein the group -A- of formula (Ia) is represented by the fifth group of the list, useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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6. claims: 1, 13-16 all partly



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Provision of compounds according to formula (I) of claim 1 wherein only one of Y and W is formula (Ib) and the other is hydrogen, useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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7. claims: 1 partly, 8,9 and 13-16 partly,

Provision of compounds according to formula (III) of claim 8 useful in treating diseases like acute, chronic, neuropathic or inflammatory pain, migraine, bladder overactivity, urinary incontinence, epilepsy, movement disorder, bowel syndrome, etc.

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International Application No

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information on patent family members

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