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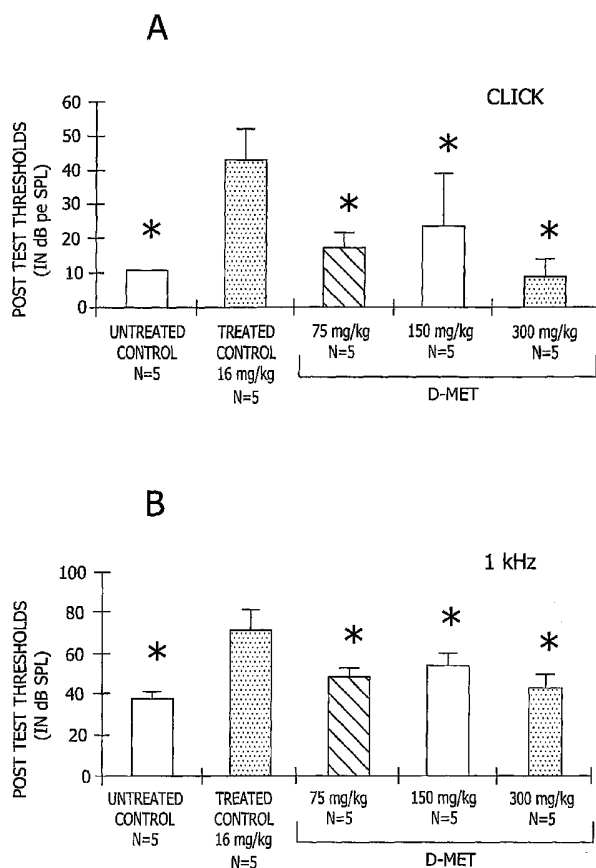
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10/694,436 27 October 2003 (27.10.2003) US
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[Continued on next page]

(54) Title: THERAPEUTIC USE OF METHIONINE FOR THE TREATMENT OR PREVENTION OF MUCOSITIS



(57) Abstract: Methods of preventing or reducing mucositis in patients who have been exposed to toxic levels of radiation or who are undergoing treatment with platinum-containing anti-tumor compounds are provided. The methods comprise administering an effective amount of a protective agent comprising methionine or a methionine-like moiety to said patient prior to, simultaneously with, or subsequently to exposure to radiation or administration of a platinum-containing anti-tumor compound. Combinations of these time periods can also be employed.



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

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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.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/035626

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/095 A61K31/198 A61P17/00

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)

IPC 7 A61K

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, WPI Data, BIOSIS, MEDLINE, EMBASE, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98/14182 A (SOUTHERN ILLINOIS UNIVERSITY) 9 April 1998 (1998-04-09) page 1, line 9 - line 31 claims 1,5 page 27, line 5 - line 25 -----	2-21, 28-37, 41-46
X	US 6 265 386 B1 (CAMPBELL KATHLEEN C. M) 24 July 2001 (2001-07-24) column 9, line 55 - line 60 column 1, line 28 - line 36 -----	2-21, 28-37, 41-46
X	US 5 667 791 A (HERSH ET AL) 16 September 1997 (1997-09-16) column 2, line 61 - line 67 column 5; examples 1-5 ----- -/--	2,3, 11-21, 38-40

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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
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- *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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

2 September 2005

Date of mailing of the international search report

08/09/2005

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/035626

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 4 961 926 A (GABRILOVE ET AL) 9 October 1990 (1990-10-09) column 3, paragraph 1 claims 1,2 column 1, paragraph 1 - paragraph 2 -----	1-5, 11-21, 28-46
X	GENTILE-RAMOS I: "Treatment of "diaper erythema" with methionine!" ARCHIVOS DE PEDIATRIA DEL URUGUAY. AUG 1965, vol. 36, no. 8, August 1965 (1965-08), pages 519-528, XP008048587 ISSN: 0004-0584 page 523, column 1, paragraph 2 - column 2, paragraph 3 page 524, column 1, paragraph 3 -----	1-3, 6-21, 38-40
A	WO 03/045334 A (SOUND PHARMACEUTICALS INCORPORATED; KIL, JONATHAN; LYNCH, ERIC D) 5 June 2003 (2003-06-05) page 1 page 15 - page 16; examples 2,3 claim 1 -----	1-46
A	WO 96/01101 A (THE PROCTER & GAMBLE COMPANY) 18 January 1996 (1996-01-18) -----	
A	WO 02/060491 A (DIATIDE, INC; CYR, JOHN, E; PEARSON, DANIEL, A) 8 August 2002 (2002-08-08) page 34; example 8 -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/035626

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 1-46 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.:

1-46
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-6,11-46 (partially); 7-10

Use of the compounds methionine, methionine-like moieties of the formula of claim 6 where $Y = NR_2R_3$, for the manufacture of a medicament for the treatment of mucositis, skin damage, aural mucositis, erythema, sunburn, desquamation and swelling, alopecia.

2. claims: 1-6,11-46 (partially)

Use of the compounds methionine, methionine-like moieties of the formula of claim 6 where $Y = OH$, for the manufacture of a medicament for the treatment of mucositis, skin damage, aural mucositis, erythema, sunburn, desquamation and swelling, alopecia.

3. claims: 47-65 (partially)

Use of the compound acetylcysteine for the manufacture of a medicament for the treatment of mucositis, skin damage, aural mucositis, erythema, sunburn, desquamation and swelling, alopecia.

4. claims: 47-65 (partially)

Use of the compound acetylcarnitine for the manufacture of a medicament for the treatment of mucositis, skin damage, aural mucositis, erythema, sunburn, desquamation and swelling, alopecia.

5. claims: 47-65 (partially)

Use of the compound lipoic acid for the manufacture of a medicament for the treatment of mucositis, skin damage, aural mucositis, erythema, sunburn, desquamation and swelling, alopecia.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/035626

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Information on patent family members

International Application No

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