PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference
DAB:AMM:FP18426

FOR FURTHER
ACTION
See Notification of Transmittal of International Preliminary
Examination Report (Form PCT/IPEA/416).

International Application No.
PCT/AU2003/001303

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3 October 2003

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4 October 2002

International Patent Classification (IPC) or national classification and IPC
Int. Cl. 7 C07D 239/91, 239/88, 239/74, 239/94, 241/42, 241/44, 241/46, 237/28, 219/06, 471/04, 471/14, 487/04,
491/052, A61K 31/436, 31/4375, 31/47, 31/473, 31/4745, 31/498, 31/4985, 31/50, 31/5025, 31/517,
31/519, A61P 25/28

Applicant
PRANA BIOTECHNOLOGY LIMITED et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and
is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

X This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been
amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule
70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 19 sheet(s).

3. This report contains indications relating to the following items:

I  X Basis of the report
II □ Priority
III □ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV □ Lack of unity of invention
V  X Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement
VI X Certain documents cited
VII □ Certain defects in the international application
VIII X Certain observations on the international application

Date of submission of the demand
2 April 2004

Name and mailing address of the IPEA/AU
AUSTRALIAN PATENT OFFICE
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Facsimile No. (02) 6285 3929

Date of completion of the report
19 January 2005

Authorized Officer

GAVIN THOMPSON
Telephone No. (02) 6283 2240

Form PCT/IPEA/409 (Cover sheet) (July 1998)
I. Basis of the report

1. With regard to the elements of the international application:*
   - [x] the description, pages 1-5, 8-10, 12, 14-15, 18-161 as originally filed,
   - pages 6, 6a, 7, 11, 13, 16-17 received on 31 December 2004 with the letter of 31 December 2004
   - [x] the claims, pages as originally filed,
   - pages as amended (together with any statement) under Article 19,
   - pages filed with the demand,
   - pages 162-173 received on 31 December 2004 with the letter of 31 December 2004
   - [x] the drawings, pages 1/5-5/5 as originally filed,
   - pages filed with the demand,
   - pages received on with the letter of
   - [ ] the sequence listing part of the description:
     - pages as originally filed
     - pages filed with the demand
     - pages received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language which is:
   - [ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
   - [ ] the language of publication of the international application (under Rule 48.3(b)).
   - [ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
   - [ ] contained in the international application in written form.
   - [ ] filed together with the international application in computer readable form.
   - [ ] furnished subsequently to this Authority in written form.
   - [ ] furnished subsequently to this Authority in computer readable form.
   - [ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - [ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. [ ] The amendments have resulted in the cancellation of:
   - [ ] the description, pages
   - [ ] the claims, Nos.
   - [ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)). **

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.
V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

<table>
<thead>
<tr>
<th>Novelty (N)</th>
<th>Claims 3, 8-9, 30, 32, 34</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Claims 1-2, 4-7, 10-29, 31, 33</td>
<td>NO</td>
</tr>
<tr>
<td>Inventive step (IS)</td>
<td>Claims 3, 8-9, 30, 32, 34</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Claims 1-2, 4-7, 10-29, 31, 33</td>
<td>NO</td>
</tr>
<tr>
<td>Industrial applicability (IA)</td>
<td>Claims 1-34</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Claims</td>
<td>NO</td>
</tr>
</tbody>
</table>

2. Citations and explanations (Rule 70.7)

The following documents from the International Search Report are still relevant:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D2</td>
<td>WO 1996/022990</td>
</tr>
<tr>
<td>D3</td>
<td>EP 290 819</td>
</tr>
<tr>
<td>D9</td>
<td>WO 1995/012417</td>
</tr>
<tr>
<td>D14</td>
<td>Chemical Abstracts abstract 45:47030</td>
</tr>
</tbody>
</table>

Novelty (N)
Claims 1, 2, 4-7, 10-29, 31, 33

D2 discloses a number of substituted quinolinone compounds (examples 1-3, 21-23) and their uses, which fall within the scope of these claims.

Claims 1, 5-7, 10-29, 33

D3 discloses (and provides enabling disclosure for) substituted pteridine compounds (where Y is OH; see table 1 No. 1-10, 13, 14), and their uses, which fall within the scope of these claims.

Claims 1, 5-6, 10-29, 33

D9 discloses two substituted quinoxalinedione compounds (48 and 49, see pages 117, 119-120), which fall within the scope of these claims.

Claims 29, 33

D14 discloses 1, 6-Naphthyridine-7-carboxylic acid, 4-chloro-5, 8-dihydroxy-, methyl ester;
1, 6-Naphthyridine-7-carboxylic acid, 5, 8-dihydroxy-, acetate;
1, 6-Naphthyridine-7-carboxylic acid, 5, 8-dihydroxy-, methyl ester;
1, 6-Naphthyridine-7-carboxylic acid, 5-chloro, 8-methoxy-, methyl ester;
1, 7-Naphthyridine-5-carboxylic acid, 4-chloro-5, 8-dihydroxy-, methyl ester;
1, 7-Naphthyridine-6-carboxylic acid, 5, 8-dihydroxy-, acetate;
1, 7-Naphthyridine-6-carboxylic acid, 5, 8-dihydroxy-, methyl ester;
1, 6-Naphthyridine-7-carboxylic acid, 5-chloro, 8-hydroxy-, methyl ester (this is 1045 of claim 9).
**VI. Certain documents cited**

1. Certain published documents (Rule 70.10)

<table>
<thead>
<tr>
<th>Application No. Patent No.</th>
<th>Publication date (day/month/year)</th>
<th>Filing date (day/month/year)</th>
<th>Priority date (valid claim) (day/month/year)</th>
</tr>
</thead>
</table>

WO 2002/085908, see compounds of formula I (folic acid analogs); which fall within the scope of claims 29 and 33.

WO 2003/010146, see examples and claims (quinoline and quinoxaline derivatives); which fall within the scope of claims 1, 2, 5-7, 10-29, 31, 33.

WO 2003/016309, see the 5-sulfonamido-8-hydroxy-1,6-naphthyridine-7-carboxamides; which fall within the scope of claims 29, 31, 33.

2. Non-written disclosures (Rule 70.9)

<table>
<thead>
<tr>
<th>Kind of non-written disclosure</th>
<th>Date of non-written disclosure (day/month/year)</th>
<th>Date of written disclosure referring to non-written disclosure (day/month/year)</th>
</tr>
</thead>
</table>

Form PCT/IEA/409 (Box VI) (July 1998)
### VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 2 is not clear because on page 165, the 3rd last compound’s structure is missing a Nitrogen atom in the pyrido ring, (and similarly for the compound on page 10 lines 1-4). It is named: pyrido[4,3-d]pyrimidin-9-ol.
Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of V.2

Inventive Step (IS)

Claims 1-2, 4-7, 10-29, 31, 33: as above

Excluded Subject Matter

Claims 1 to 22 in some contracting states to the PCT may not be considered subject matter for patents as they implicitly involve the medical treatment of animals including humans.

Industrial Applicability (IA)

While no unified criteria exist for determining what belongs in the category of industrial applicability, there is nothing evident in the claims that would deprive them of affirmation in this category.
in which

R is O or S;
R¹ is independently selected from H, optionally substituted alkyl,
optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted
aryl; optionally substituted heterocyclyl; an antioxidant; a targeting moiety; CN; halo;
CF₃; SO₂H; and OR², SR², SOR², SO₂R², NR²R³, (CH₂)nNR²R³, HCNOR²,
HCN NR²R³, CONR²R³, CSNR²R³, NCOR², NCSR², COR², CO₂R², CSR² or
SO₂NR²R³ in which R² and R³ are independently selected from H, optionally
substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl,
optionally substituted aryl, optionally substituted heterocyclyl, an antioxidant or a

targeting moiety and n is an integer of 1 to 10;

X is independently selected from CH, CO, N and NH;
Z is independently selected from CH, CO, N, NH and O;
Y is absent or together with the ring to which it is attached forms a 5- or
6-membered optionally substituted aryl or a 5- or 6-membered optionally substituted
heterocyclyl;

m is an integer from 1 to 3; and
p is an integer from 1 to 4,
salts, hydrates, solvates, derivatives, pro-drugs, tautomers and/or isomers
thereof to a subject in need thereof,

with the provisos that:
(i) at least one of X and Z is other than CH;
(ii) phanquinone or tautomers thereof are excluded i.e., when R is O,
R¹ at position 7 is OH, X is CH and Y is absent, then Z is not
(iii) when $R$ is O, $Y$ is absent, $Z$ is CH,
$X$ is CH other than at position 3

where $X$ is N, $m$ is 2 and $R^1$ is

at position 3, then $R^1$ at position 2 is not

or

(iiv) clioquinol i.e., when $R$ is O, $Y$ is absent,
$Z$ and $X$ are CH and $m$ is 2,
then $R^1$ at position 5 is not chloro and $R^1$ at position 7 is not iodo.
Further according to the present invention there is provided use of the
compound of formula I in the manufacture of a medicament for the treatment,
amelioration and/or prophylaxis of a neurological condition.

The invention also provides use of the compound of formula I for the
treatment, amelioration and/or prophylaxis of a neurological condition.

The invention further provides the compound of formula I for use in the
treatment, amelioration and/or prophylaxis of a neurological condition.

The invention still further provides use of the compound of formula I as
a pharmaceutical, preferably a neurotherapeutic or neuroprotective agent, more
preferably an antiamyloidogenic agent. Preferably, the neurological condition is a
neurodegenerative condition, more preferably neurodegenerative amyloidosis such as
Alzheimer’s disease or Parkinson’s disease.

R is preferably O.

R^1 is preferably halo, optionally substituted aryl, optionally substituted
heterocycll, optionally substituted alkyl, OR^2, SR^2, (CH_2)_nNR^2R^3, CONR^2R^3 and
NCOR^2 in which n, R^2 and R^3 are as defined above. More preferably R^1 is fluoro; iodo;
chloro; optionally substituted phenyl such as 4-halophenyl, for example, 4-fluorophenyl
or 4-chlorophenyl; an optionally substituted unsaturated 3 to 6-membered
heteromonocyclic group containing 1 to 4 nitrogen atoms such as imidazolyl or
pyridinyll; an optionally substituted saturated 3 to 6-membered heteromonocyclic group
containing 1 to 4 nitrogen atoms such as imidazolidinyl or piperazinyl; an optionally
substituted saturated 3 to 6-membered heteromonocyclic group containing 1 to 2
oxygen atoms and 1 to 3 nitrogen atoms such as morpholinyl; optionally substituted C_1
alkyl such as methyl or ethyl; optionally substituted C_2 to C_6 cycloalkyl such as
cyclopropyl; optionally substituted C_1 to C_6 alkoxy; optionally substituted thio; CH_2NR^4R^5
in which R^4 and R^5 are independently selected from H and C_1 to C_4 alkyl; or
CONH(CH_2)_2R^6 in which R^6 is optionally substituted heterocycll.

Y is preferably an optionally substituted phenyl; an optionally substituted
unsaturated 5- or 6-membered heteromonocyclic group containing 1 to 4 nitrogen atoms
such as imidazolyl or pyridinyl; or an optionally substituted saturated 5 or 6-membered
heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms such as
morpholinyl.

While not wishing to be bound by theory, it is believed that substituent
R^1 has a limited effect, electronically or sterically, in the chelating properties of the
compounds of the present invention. Substitution can therefore be used to modulate
other parameters such as cytotoxicity and physicochemical properties including the
number of hydrogen bond donors and acceptors, lipophilicility (ClogP, ElogP and
A preferred compound of formula I is a compound of formula IA

\[
\begin{array}{c}
\text{IA} \\
\text{\( (R^1)_m \)} \\
\text{\( \text{RH} \)}
\end{array}
\]

in which
- \( R, R^1 \) and \( m \) are as defined above;
- \( W \) is CH, N or NH; 
- \( U \) is CH, CO or N; and
- \( Y' \) is absent or together with the ring to which it is attached forms a 6 membered N-containing optionally substituted heterocycl.

Preferred compounds of formula IA are as follows:

(i) Formula Ia

\[
\begin{array}{c}
\text{Ia} \\
\text{\( (R^1)_m \)} \\
\text{\( \text{RH} \)}
\end{array}
\]

in which \( R, R^1, m \) and \( q \) are as defined above.

Preferably \( R^1 \) is located at positions 2, 3, 5 and/or 7 and is selected from halo, optionally substituted aryl, optionally substituted heterocycl, optionally substituted alkyl and \((\text{CH}_2)_n\text{NR}^2\text{R}^3\) in which \( n, R^2 \) and \( R^3 \) are as defined above. More preferably \( R^1 \) is chloro, optionally substituted phenyl, C\(_{3-6}\) cycloalkyl, CH\(_2\)NR\(^4\)R\(^5\) in which \( R^4 \) and \( R^5 \) are independently selected from H and C\(_{1-4}\) alkyl or optionally substituted pyridinyl.

Particularly preferred examples are shown below.
Preferred examples are shown below.

\[
\begin{align*}
\text{Cl} & \quad \text{Cl} \\
\text{Cl} & \quad \text{OH} \\
\text{Cl} & \quad \text{OH} \\
\text{Cl} & \quad \text{OH}
\end{align*}
\]

\(\text{CLogP} = 3.087\) \hspace{1cm} \(\text{CLogP} = 2.35872\)

(iii) Formula Ic

\[
\begin{align*}
(R^1)_m \quad \text{N} \\
(R^1)_q \\
\text{RH} \\
\text{Cl}
\end{align*}
\]

in which \(R, R^1, m\) and \(q\) are as defined above.

Preferably \(R^1\) is located at positions 2, 5 and/or 7 and is selected from halo and \(\text{CH}_2\text{NR}^4\text{R}^5\) in which \(R^4\) and \(R^5\) are independently selected from \(\text{H}\) and \(\text{C}_1\text{C}_4\) alkyl.

Preferred examples are shown below.

\[
\begin{align*}
\text{Cl} & \quad \text{Cl} \\
\text{Cl} & \quad \text{OH} \\
\text{Cl} & \quad \text{OH} \\
\text{Cl} & \quad \text{NMe}_2
\end{align*}
\]

\(1066\) \hspace{1cm} \(\text{CLogP} = 2.57029\)
Preferred examples are shown below.

(vi) Formula If

\[ \text{in which } R^1 \text{ and } m \text{ are as defined above.} \]

Preferably \( R^1 \) is located at positions 2 and/or 6 and is selected from halo and \( (\text{CH}_2)_n\text{NR}^2\text{R}^3 \) in which \( n, R^2 \) and \( R^3 \) are as defined above.
Preferred examples are shown below.

\[
\begin{array}{ccc}
\text{Cl} & \\
\text{OH} & \\
\text{N} & \\
\end{array} & \begin{array}{ccc}
\text{Cl} & \\
\text{OH} & \\
\text{NMe}_2 & \\
\end{array} & \begin{array}{ccc}
\text{OH} & \\
\text{N} & \\
\end{array}
\]

\text{CLogP} = 2.77788 \quad \text{CLogP} = 2.61188

In a further aspect, the invention provides a pharmaceutical or veterinary composition comprising the compound of formula I as defined above, together with a pharmaceutically or veterinarily acceptable carrier.

Some of the compounds of formula I are novel per se.

Accordingly, the invention provides a compound of formula II which is a compound of formula I with the provisos that at least one \( R^1 \) is other than H.

Preferred compounds of formula II are compounds of the formula IA, more preferably compounds of the formulae Ia, Ib, Ic, Id and Ie defined above, most preferably 1045, 1061, 1066, 1053, 1063, 1064, 1065, 1067, 1069 and 1070.

The compound of formula II defined above may be prepared using the processes described in detail hereinafter.

**DETAILED DESCRIPTION OF THE INVENTION**

In the claims of this application and in the description of the invention, except where the context requires otherwise due to express language or necessary implication, the words "comprise" or variations such as "comprises" or "comprising" are used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.

The term "alkyl" used either alone or in compound words such as "optionally substituted alkyl" or "alkylamino" refers to straight chain, branched chain or cyclic hydrocarbon groups having from 1 to 10 carbon atoms, preferably 1 to 6 carbon atoms, more preferably 1 to 4 carbon atoms. Illustrative of such alkyl groups are methyl, ethyl, propyl, isopropyl, butyl, isobutyl, sec-butyl, tert-butyl, pentyl, neopentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl. Preferred alkyl groups are \( C_{1-4} \) alkyl such as methyl or ethyl and \( C_{2-6} \) cycloalkyl such as cyclopropyl.
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for the treatment, amelioration and/or prophylaxis of a neurological condition which comprises the administration of an effective amount of a compound of formula I:

   \[
   \begin{array}{c}
   (R^1)_p \\
   (R^1)_p \\
   (R^1)_p \\
   Z X Y \quad Y X Z \\
   (R^1)_m \\
   \end{array}
   \]

   I

   in which
   - \( R \) is O or S;
   - \( R^1 \) is independently selected from H, optionally substituted alkyl, optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted aryl; optionally substituted heterocyclyl; an antioxidant; a targeting moiety; CN; halo; CF3; SO3H; and OR2, SR2, SOR2, SO2R2, NR2R3, (CH2)nNR2R3, HCNOR2, HCNNR2R3, CONR2R3, CSNR2R3, NCOR2, NCSR2, COR2, CO2R2, CSR2 or SO2NR2R3 in which \( R^2 \) and \( R^3 \) are independently selected from H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, optionally substituted heterocyclyl, an antioxidant or a targeting moiety and \( n \) is an integer of 1 to 10;
   - \( X \) is independently selected from CH, CO, N and NH;
   - \( Z \) is independently selected from CH, CO, N, NH and O;
   - \( Y \) is absent or together with the ring to which it is attached forms a 5- or 6-membered optionally substituted aryl or a 5- or 6-membered optionally substituted heterocyclyl;
   - \( m \) is an integer from 1 to 3; and
   - \( p \) is an integer from 1 to 4,
   - salts, hydrates, solvates, derivatives, pro-drugs, tautomers and/or isomers thereof to a subject in need thereof;

   with the provisos that:
   (i) at least one of \( X \) and \( Z \) is other than CH;
(ii) phanquinone or tautomers thereof are excluded i.e., when R is O, R\(^1\) at position 7 is OH, X is CH and Y is absent, then Z is not

\[
\begin{array}{c}
\text{O} \\
\text{N} \\
\text{C}
\end{array}
\]

5

(iii) when R is O, Y is absent, Z is CH, X is CH other than at position 3

where X is N, m is 2 and R\(^1\) is

\[
\begin{array}{c}
\text{NH} \\
\text{N} \\
\text{C}
\end{array}
\]

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at position 3, then R\(^1\) at position 2 is not

\[
\begin{array}{c}
\text{S} \\
\text{NHAc} \\
\text{Ph}
\end{array}
\]

or

\[
\begin{array}{c}
\text{S} \\
\text{NH} \\
\text{SO}_2\text{Me}
\end{array}
\]; and

25

(iv) clioquinol i.e., when R is O, Y is absent, Z and X are CH and m is 2,
Then R\(^1\) at position 5 is not chloro and R\(^1\) at position 7 is not iodo.

30

2. A method according to claim 1, in which the compound of formula I is selected from the following:

\[
\text{8-hydroxy-4(3H)-quinazolinones;}
\]

35

\[
\text{8-hydroxy-quinazoline;}
\]

40

\[
\text{8-hydroxy-quinoxaline;}
\]
[1,6]naphthyridin-8-ol;

9-hydroxypyrindino[1,6-a]pyrimidin-4-one;

8-hydroxy-cinnoline;

6-hydroxy-phenazine;

4-hydroxy-acridine;

4,7(4,10)-phenanthrolin-5-ol;

9-hydroxypyrido[1,2-a]pyrimidin-4-one;
- 165 -

pyrido[3,2-d]pyrimidin-4-ol;

pyrido[2-3-d]pyridazin-8-ol;

[1,7]naphthyridin-8-ol;

[1,5]naphthyridine-4,8-diol;

[1,5]naphthyridine-8-ol;

pyrido[3,4-b]pyrazin-8-ol;

pyrido[3,4-b]pyrazin-5-ol;

pyridol[4,3-d]pyrimidin-8-ol;

4-hydroxy-4a,8a-dihydro-pyrano[3,2,b]pyridin-2-one;

8-hydroxy-6H-[1,6]naphthyridin-5-one;
8-hydroxy-6H-[1,6]naphthyridin-5-one;

dibenzo[a,g]quinolizine-8-one; and

4-hydroxy-1H-pyrido[3,2-d]pyridin-2-one

in which R\(^1\), m, n and p are as defined in claim 1 and q is an integer of 1 or 2.

3. A method according to claim 1 or claim 2 in which the compound of formula I is a compound of formula IA

in which

R, R\(^1\) and m are as defined in claim 1;
W is CH, N or NH;
U is CH, CO or N; and
Y' is absent or together with the ring to which it is attached forms a 6 membered N-containing optionally substituted heterocycle.
4. A method according to claim 3 in which the compound of formula IA is selected from the following:

(i) Formula Ia

\[
\begin{align*}
& \text{(R}^1)_{m} \\
\text{N} \\
\text{(R}^1)_{q} \\
\text{RH}
\end{align*}
\]

Ia

in which R, R\(^1\), m and q are as defined above;

(ii) Formula Ib

\[
\begin{align*}
& \text{(R}^1)_{m} \\
\text{N} \\
\text{(R}^1)_{q} \\
\text{RH}
\end{align*}
\]

Ib

in which R, R\(^1\), m and q are as defined in any one of claims 1 to 3;

(iii) Formula Ic

\[
\begin{align*}
& \text{(R}^1)_{m} \\
\text{N} \\
\text{(R}^1)_{q} \\
\text{RH}
\end{align*}
\]

Ic

in which R, R\(^1\), m and q are as defined in any one of claims 1 to 3;

(iv) Formula Id

\[
\begin{align*}
& \text{(R}^1)_{q} \\
\text{N} \\
\text{(R}^1)_{m} \\
\text{RH}
\end{align*}
\]

Id
in which R, R¹, m and q are as defined in any one of claims 1 to 3;
(v)  Formula Ie

\[
\begin{array}{c}
\text{O} \\
(R³)_m \\
(R³)_q \\
\text{RH}
\end{array}
\]

in which R, R¹, m and q are as defined in any one of claims 1 to 3; and
(vi) Formula If

\[
\begin{array}{c}
\text{N} \\
(R³)_m \\
\text{OH}
\end{array}
\]

in which R¹ and m are as defined in any one of claims 1 to 3.

5. A method according to any one of claims 1 to 4 in which R in the compound of formula I is O.

6. A method according to any one of claims 1 to 5 in which R¹ in the compound of formula I is halo, optionally substituted aryl, optionally substituted heterocyclyl, optionally substituted alkyl, OR², SR², (CH₂)ₙNR²R³, CONR²R³ and NCOR² in which n, R² and R³ are as defined in any one of claims 1 to 3.

7. A method according to any one of claims 1 to 6 in which R¹ in the compound of formula I is fluoro, iodo, chloro, optionally substituted phenyl, an optionally substituted unsaturated 3 to 6-membered heteromonocyclic group containing 1 to 4 nitrogen atoms, an optionally substituted saturated 3 to 6-membered heteromonocyclic group containing 1 to 4 nitrogen atoms, an optionally substituted saturated 3 to 6-membered heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms, optionally substituted C₁₋₄ alkyl, optionally substituted C₂₋₆ cycloalkyl, optionally substituted C₁₋₆ alkoxy, optionally substituted thio, CH₂NR¹R⁵ in which R⁴ and R⁵ are independently selected from H and C₁₋₄ alkyl or CONH(CH₂)₂R⁶ in which R⁶ is optionally substituted heterocyclyl.
8. A method according to any one of claims 1 to 7 in which \( Y \) in the compound of formula I is an optionally substituted phenyl, an optionally substituted unsaturated 5- or 6-membered heteromonocyclic group containing 1 to 4 nitrogen atoms or an optionally substituted saturated 5 or 6-membered heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms.

9. A method according to any one of claims 1 to 8, in which the compound of formula I is as follows:

![Chemical Structures](image_url)
10. A method according to any one of claims 1 to 9, in which the neurological condition is a neurodegenerative disorder.

11. A method according to claim 10, in which the neurodegenerative disorder is neurodegenerative amyloidosis.

12. A method according to claim 10 or claim 11, in which the neurodegenerative disorder is sporadic or familial Alzheimer’s disease, amyotrophic lateral sclerosis, cataract, Parkinson’s disease, Creutzfeldt-Jacob disease and its new variant associated with "mad cow" disease, Huntington’s disease, dementia with Lewy body formation, multiple system atrophy, Hallerboden-Spatz disease, diffuse Lewy body disease, fatal familial insomnia, Gersmann Strausssler Sheinker disease, hereditary cerebral haemorrhage with amyloidosis-Dutch type, multiple sclerosis, tauopathies, motor neuron disease or prion diseases.
13. A method according to claim 12, in which the neurodegenerative disorder is Parkinson's disease.

14. A method according to any one of claims 10 to 12, in which the neurodegenerative disorder is an Aβ-related condition.

15. A method according to claim 14, in which the Aβ-related condition is Alzheimer's disease or dementia associated with Down syndrome or one of several forms of autosomal dominant forms of familial Alzheimer's disease.

16. A method according to any one of the preceding claims which slows, reduces or arrests the cognitive decline of the subject.

17. A method according to any one of the preceding claims, which further comprises separate, sequential or simultaneous administration of another medicament.

18. A method according to claim 17, in which the other medicament is an inhibitor of the acetylcholinesterase active site, an antioxidant, an anti-inflammatory agent or an oestrogenic agent.

19. A method according to any one of the preceding claims, in which the compound of formula I is administered orally, topically or parenterally.

20. Use of the compound of formula I as defined in any one of claims 1 to 9, in the manufacture of a medicament for the treatment, amelioration and/or prophylaxis of a neurological condition.

21. Use of a compound of formula I as defined in any one of claims 1 to 9 for the treatment, amelioration and/or prophylaxis of a neurological condition.

22. A compound of formula I as defined in claims 1 to 9 for use in the treatment, amelioration and/or prophylaxis of a neurological condition.

23. Use of the compound of formula I as defined in any one of claims 1 to 9, as a pharmaceutical.
24. Use according to claim 23, in which the pharmaceutical is a neurotherapeutic or neuroprotective agent.

25. Use according to claim 23 or claim 24, in which the pharmaceutical is an antiAmyloidogenic agent.

26. A pharmaceutical or veterinary composition comprising the compound of formula I as defined above in any one of claims 1 to 9 and a pharmaceutically or veterinarily acceptable carrier.

27. A composition according to claim 26 which further comprises another medicament.

28. A composition according to claim 27, in which the other medicament is an inhibitor of the acetylcholinesterase active site, an antioxidant, an anti-inflammatory agent or an oestrogenic agent.

29. A compound of formula II which is a compound of formula I as defined in any one of claims 1 to 9, with the further proviso that at least one R¹ is other than H.

30. A compound of formula IA as defined in claim 3.

31. Compounds of the formulae Ia, Ib, Ic, Id, Ie and If as defined in claim 4.

32. A compound as defined in claim 9 excluding 1049, 1048, 1026 and 1045.

33. A process for the preparation of the compound of formula II defined in claim 29 as described herein.

34. A compound of the formula: