**Title:** PREDICTING RESPONSE TO A HER DIMERISATION INHIBITOR BASED ON LOW HER3 EXPRESSION

![Diagram](image)

**FIG. 6**


(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(57) Abstract: The present application describes the use of low HER3 as a selection criterion for treating patients with a HER inhibitor, such as pertuzumab. It also describes the use of high HER2:HER3 ratio as a selection criterion for treating cancer patients, such as ovarian cancer patients, with a HER inhibitor, such as pertuzumab. In addition, the application describes the use of high HER3 as a selection criterion for treating cancer patients with a chemotherapeutic agent, for instance gemcitabine.
Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. GOIN33/574 C12Q1/68 A61K39/395

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)

GOIN C12Q 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, BIOSIS, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>paragraph [0015] - paragraph [0016]</td>
<td>60-109, 111-113</td>
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</table>

X Further documents are listed in the continuation of Box C.

X 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 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

*Y* 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

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*P* document member of the same patent family

Date of the actual completion of the international search

17 February 2009

Date of mailing of the international search report

24/02/2009

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Pettenkloeren 2 NL - 2280 HV Rijswijk
Telefax (+31-70) 340-2040; Fax (+31-70) 340-2015

Authorized officer

Chakravarty, Ashok
<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</table>
INTERNATIONAL SEARCH REPORT

Box No. 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. [X] Claims Nos.: 53,110
   because they relate to subject matter not required to be searched by this Authority, namely:
   Rule 39.1(iii) PCT - Scheme, rules and method for doing business

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 No. 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. [X] 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 fees, this Authority did not invite payment of additional fees.

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

[X] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

[] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the Invitation.

[] No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-59

Methods in which low HER3 expression is prognostic of increased efficacy of treatment. Methods in which low HER3 expression is prognostic of increased efficacy of treatment.

2. claims: 60-113

Methods where high HER2:HER3 expression is prognostic of increased efficacy of treatment.
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<td>US 2004106161 A1</td>
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