Methods and Compositions for Increasing Hepcidin Expression Using Modified Iron Binding/Releasing Transferrin

FIG. 1

Abstract: Provided are methods for increasing hepcidin expression, treating a disorder associated with iron overload, decreasing non-transferrin bound iron (NTBI), reducing spleen size, ameliorating ineffective erythropoiesis, decreasing iron uptake by erythroid cells, and increasing transferrin receptor 1 (TfR1) expression in a subject in need thereof, comprising administering to said subject a therapeutically effective amount of a modified iron binding/releasing transferrin, wherein said modified iron binding/releasing transferrin comprises an N-lobe and a C-lobe, and wherein one of said lobes binds iron, and wherein one of said lobes has a decreased binding affinity for iron.
# INTERNATIONAL SEARCH REPORT

**International application No.**
PCT/US14/63928

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC(8) -**
C07K 14/79; A61K 38/00, 47/48 (2015.01)

**CPC -**
C07K 14/79; A61K 47/483, 38/00

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(8):**
C07K 14/79; A61K 38/00, 47/48 (2015.01)

**CPC:**
C07K 14/79; A61K 47/483, 38/00; USPC: 530/394, 400; 435/325

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of data bank and, where practicable, search terms used)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data), Google; Google Scholar, PubMed, ScienceDirect; 'modified transferrin,' iron, transferrin, 'iron release,' thalassemia, hemochromatosis

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<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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</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2003/0221201 (PRIOR, C P et al.) November 27, 2003; paragraphs [0201], [0210], [0336]-[0338]</td>
<td>1, 2, 4/1, 4/2, 5/4/1, 5/4/2, 6/4/1, 6/4/2, 12/1, 12/2, 13/1, 13/2, 14/1, 14/2, 15/14/1, 15/14/2, 16/1, 16/2, 18/1, 18/2, 20/1, 20/2, 38/1, 38/2, 39/1, 39/2, 40/1, 40/2, 41-43, 45/42, 46/42, 47/42, 50, 51, 52/41, 52/42, 54/41, 54/42, 56/41, 56/42, 58/41-58/43</td>
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  * "A" document defining the general state of the art which is not considered to be of particular relevance
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  * "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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Date of the actual completion of the international search

05 February 2015 (05.02.2015)

Date of mailing of the international search report

04 MAR 2015

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<tr>
<td>Y</td>
<td>HARMATZ, P et al. Severity Of Iron Overload In Patients With Sickle Cell Disease Receiving Chronic Red Blood Cell Transfusion Therapy. Blood. 01 July 2000, Vol. 96, No. 1; pages 76-79; page 78, left column, fourth paragraph.</td>
<td>24, 31</td>
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