m is 1, 2 or 3;

h is 0, 1, 2; and

g is 0, 1 or 2, wherein the compound is to be contacted with blood; and wherein the medicament is formulated for administration to a subject having pyruvate kinase deficiency (PKD).

~~2. The use of claim 1, wherein the compound of formula I or a pharmaceutically acceptable salt thereof, or the pharmaceutically acceptable composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier is to be administered to a subject suffering from pyruvate kinase deficiency.~~

~~3.~~2. The use of claim 1, wherein the lifetime of the red blood cells is increased.

~~4.~~3. Use of a compound in the manufacture of a medicament for reducing 2,3-diphosphoglycerate (2,3-DPG) levels or preventing an increase in 2,3-DPG levels in blood comprising an effective amount of (1) a compound of formula I or a pharmaceutically acceptable salt thereof; (2) a pharmaceutically acceptable composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein the compound is to be contacted with blood; and wherein formula I is as defined in claim 1;~~,~~ and wherein the medicament is formulated for administration to a subject ~~in need thereof~~having pyruvate kinase deficiency (PKD).

~~5.~~4. Use of a compound in the manufacture of a medicament for treating hemolytic anemia comprising (1) a compound of formula I or a pharmaceutically acceptable salt thereof; or (2) a pharmaceutically acceptable composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein formula I is as defined in claim 1, and wherein the medicament is formulated for administration to a subject in need thereof.

~~6.~~5. The use according to claim ~~5~~4, wherein the hemolytic anemia is hereditary non-spherocytic hemolytic anemia.

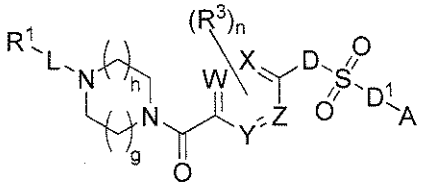
~~7.~~6. Use of a compound in the manufacture of a medicament for treating pyruvate kinase deficiency (PKD) in a subject comprising (1) a compound of formula I or a pharmaceutically acceptable salt thereof; or (2) a pharmaceutically acceptable composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein formula I is as defined in claim 1, and wherein the medicament is formulated for administration to a subject in need thereof.

8. Use of a compound in the manufacture of a medicament for treating sickle cell anemia comprising (1) a compound of formula I or a pharmaceutically acceptable salt thereof; or (2) a pharmaceutically acceptable composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein formula I is as defined in claim 1, and wherein the medicament is formulated for administration to a subject in need thereof.

9. Use of a compound in the manufacture of a medicament for treating thalassemia, e.g., beta-thalassemia; hereditary spherocytosis; hereditary elliptocytosis; abetalipoproteinemia or Bassen-Kornzweig syndrome; paroxysmal nocturnal hemoglobinuria; acquired hemolytic anemia, e.g., congenital anemias, e.g., enzymopathies; or anemia of chronic diseases comprising (1) a compound of formula I or a pharmaceutically acceptable salt thereof; or (2) a pharmaceutical composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein formula I is as defined in claim 1, and wherein the medicament is formulated for administration to a subject in need thereof.

9. Use of a compound in the manufacture of a medicament for treating beta-thalassemia comprising (1) a compound of formula I or a pharmaceutically acceptable salt thereof; or (2) a pharmaceutical composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier; wherein formula I is as defined in claim 1, and wherein the medicament is formulated for administration to a subject in need thereof.

10. The use of any one of claims 1 to 9, wherein the compound is represented by formula (I), wherein:



(I)

W, X, Y and Z are each independently selected from CH or N;

D and D^1 are independently selected from a bond or NR^b;

A is optionally substituted bicyclic heteroaryl;

L is a bond, $-C(O)-$, $-(CR^cR^c)_m-$, $-OC(O)-$, $-(CR^cR^c)_m-OC(O)-$, $-(CR^cR^c)_m-C(O)-$, $-NR^bC(S)-$, or $-NR^bC(O)-$ (wherein the point of the attachment to R^1 is on the left-hand side);

R^1 is selected from alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl; each of which is substituted with 0-5 occurrences of R^d;

each R^3 is independently selected from halo, haloalkyl, alkyl, hydroxyl and $-OR^a$ or two adjacent R^3 taken together with the carbon atoms to which they are attached form an optionally substituted cyclyl;