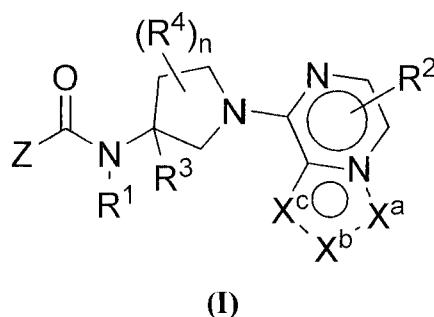


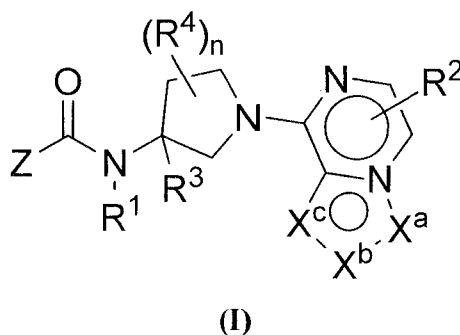
BRIEF SUMMARY

[0016] The present disclosure provides compounds having formula I,



5 or pharmaceutically acceptable salts, hydrates or N-oxides thereof. The various groups (e.g., R^1 , R^2 , R^3 , R^4 , Z, X^a , X^b , X^c and the subscript n) are described in the Detailed Description of the Invention.

[0016a] In one aspect of the present disclosure, there is provided a compound having formula I



10 or a pharmaceutically acceptable salt, hydrate, isotopically enriched or enantiomerically enriched version thereof, wherein

each of ring vertices X^a , X^b and X^c is independently selected from the group consisting of

15 N, NH, $N(R^2)$, Θ -CH and $C(R^2)$;

the subscript n is 0, 1 or 2;

Z is selected from the group consisting of

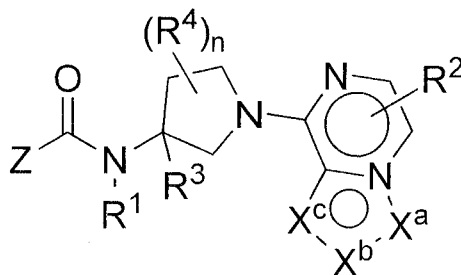
(i) monocyclic or fused-bicyclic aryl and heteroaryl, wherein the heteroaryl group has from 1-4 heteroatoms as ring members selected from N, O and S; and wherein said

20 aryl and heteroaryl groups are optionally substituted with from 1 to 5 R^5 substituents;

(ii) monocyclic four-, five-, six- or seven-membered ring selected from the group consisting of cycloalkane, and heterocycloalkane, wherein the heterocycloalkane rings have from 1-3 heteroatoms as ring members selected from N, O and S; and wherein

WHAT IS CLAIMED IS:

1. A compound having formula I



(I)

or a pharmaceutically acceptable salt, hydrate, isotopically enriched or enantiomerically enriched version thereof, wherein

each of ring vertices X^a , X^b and X^c is independently selected from the group consisting of

N, NH, $N(R^2)$, Θ , CH and $C(R^2)$;

the subscript n is 0, 1 or 2;

Z is selected from the group consisting of

- (i) monocyclic or fused-bicyclic aryl and heteroaryl, wherein the heteroaryl group has from 1-4 heteroatoms as ring members selected from N, O and S; and wherein said aryl and heteroaryl groups are optionally substituted with from 1 to 5 R^5 substituents;
- (ii) monocyclic four-, five-, six- or seven-membered ring selected from the group consisting of cycloalkane, and heterocycloalkane, wherein the heterocycloalkane rings have from 1-3 heteroatoms as ring members selected from N, O and S; and wherein each of said monocyclic Z rings are optionally substituted with from 1 to 3 R^5 substituents;

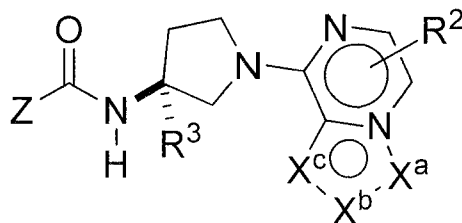
R^1 is a member selected from the group consisting of H and C_{1-8} alkyl, wherein the alkyl portion is optionally substituted with halogen, $-NR^aR^b$, $-OR^a$, $-CO_2R^a$, and $-CONR^aR^b$;

each R^2 is independently selected from the group consisting of H, halogen, CN, C_{1-8} alkyl, C_{1-8} haloalkyl, C_{1-8} hydroxyalkyl, $-OR^a$, $-CO_2R^a$, $-X-CO_2R^a$, $-NR^aR^b$, $-CONR^aR^b$ and $-X-CONR^aR^b$;

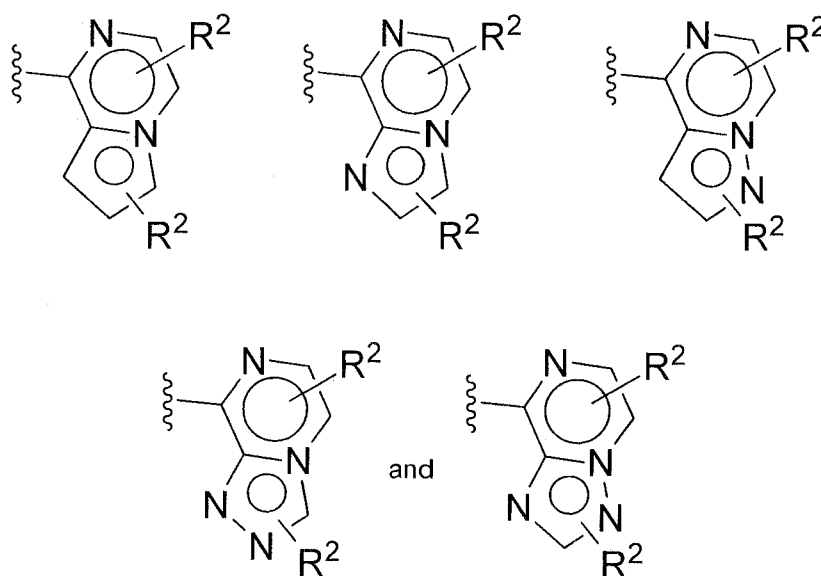
R^3 is a member selected from the group consisting of H, C_{1-8} alkyl, C_{1-8} haloalkyl, C_{1-8} hydroxyalkyl, $-CO_2R^a$, $-X-CO_2R^a$, $-CONR^aR^b$ and $-X-CONR^aR^b$;

each R^4 , when present, is a member independently selected from the group consisting of C_{1-8} alkyl, C_{1-8} haloalkyl, C_{1-8} hydroxyalkyl, $-OR^a$, $-CO_2R^a$, $-X-CO_2R^a$, $-NR^aR^b$, $-CONR^aR^b$ and $-X-CONR^aR^b$;

8. The compound of claim 1, having the structure:



9. The compound of claim 8, wherein the bicyclic portion having X^a, X^b and X^c as ring vertices is selected from the group consisting of:

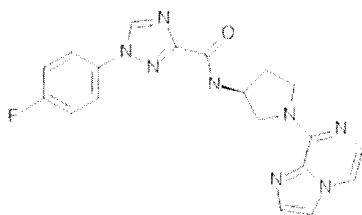


10. A compound of claim 8, wherein Z is a 5-membered heteroaryl group substituted with one R⁵ group selected from an optionally substituted aryl, 5- or 6-membered heteroaryl, C₃-C₈ cycloalkyl, or 3-, 4-, 5-, or 6-membered heterocycloalkyl ring, and optionally with up to two additional R⁵ groups which are selected from halogen, C₁₋₄ alkyl, C₁₋₄ haloalkyl and CH₂CN.

11. A compound of claim 10, wherein Z is selected from the group consisting of:

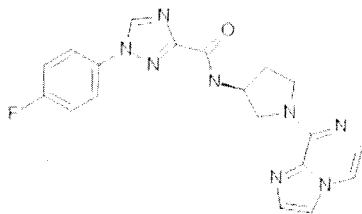
or a pharmaceutically acceptable salt thereof.

18. A compound of claim 1, having the formula:



or a pharmaceutically acceptable salt thereof.

19. A compound of claim 1, having the formula:



1820. A pharmaceutical composition comprising a compound of any one of claims 1 to 19 and a pharmaceutically acceptable excipient.

19.—The pharmaceutical composition of claim **18**, wherein the compound is a compound of claim **17**.

2021. A compound of any one of claims 1 to 20 for use in treating a disease or disorder in a mammal.

21.—The compound of claim **20**, wherein the compound is a compound of claim **17**.

22. The compound of claim **2021**, wherein said disease or disorder is selected from the group consisting of cancer, inflammation and hematopoietic disorders.

23. The compound of claim **22**, wherein said cancer is head and neck cancer.

24. The compound for the use of claim **22**, wherein said cancer is glioblastoma.

2325. An *in vitro* method of inhibiting the binding of chemokines I-TAC or SDF-1 to a CXCR7 receptor, comprising contacting a compound of any one of claims 1 to 20 with a cell that expresses the CXCR7 receptor for a time sufficient to inhibit the binding of the chemokines to the CXCR7 receptor.

24.—The *in vitro* method of claim **23**, wherein the compound is a compound of claim **17**.

2526. A method for imaging a tumor, organ, or tissue, said method comprising: detecting a radiolabeled or detectable form of a compound of any one of claims 1 to 15-20 in a subject who had been administered said compound to determine where said compound is concentrated in said subject.

~~26~~27. A method in accordance with claim ~~25~~26, wherein said compound is radiolabeled.

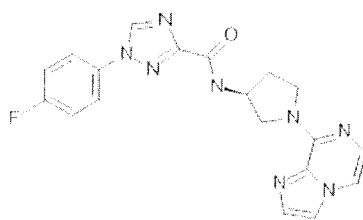
~~27~~28. A method for detecting elevated levels of CXCR7 in a sample, said method comprising:

- (a) contacting a sample suspected of having elevated levels of CXCR7 with a radiolabeled or detectable form of a compound of any one of claims ~~1~~ to ~~15~~20;
- (b) determining a level of compound that is bound to CXCR7 present in said sample to determine the level of CXCR7 present in said sample; and
- (c) comparing the level determined in step (b) with a control sample to determine if elevated levels of CXCR7 are present in said sample.

~~28~~29. A method in accordance with claim ~~27~~28, wherein said compound is radiolabeled.

~~29~~30. Use of a compound of any one of claims 1 to 20 in the manufacture of a medicament for the treatment of a disease or disorder selected from the group consisting of cancer, inflammation and hematopoietic disorders.

~~30~~.—A compound of claim ~~1~~, having the formula:



or a pharmaceutically acceptable salt thereof.

~~31~~.—A compound of claim ~~1~~, having the formula:

