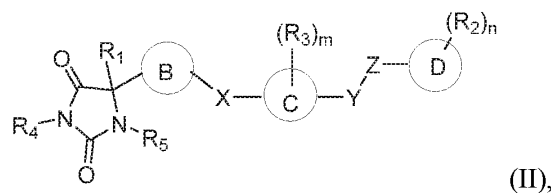


CLAIMS

We claim:

1. A compound of formula (II):



or a tautomer, stereoisomer, pharmaceutically acceptable salt, or solvate thereof,
wherein:

ring B is optionally substituted furanyl;

ring C is aryl or heteroaryl;

ring D is aryl or heteroaryl;

each of X, Y, and Z is independently selected from the group consisting of O, CH₂, NR_x and S(O)_q, wherein R_x is hydrogen or alkyl;

R₁ is hydrogen or alkyl;

each R₂ is independently selected from the group consisting of hydrogen, alkyl, halo, hydroxyl, haloalkyl, alkoxy, alkylthio, amino, amide, alkylamine, aminoalkyl, cyano, hydroxyalkyl, -(CH₂)_pC(O)OR₆, and -(CH₂)_pOC(O)R₆;

each R₃ is independently selected from the group consisting of hydrogen, alkyl and halo;

R₄ is hydrogen or alkyl;

R₅ is hydrogen;

each R₆ is independently selected from the group consisting of hydrogen and alkyl, wherein the alkyl is unsubstituted or substituted with one or more groups independently selected from the group consisting of amino, hydroxyl, halo, and alkoxy;

m is 1, 2, 3, or 4;

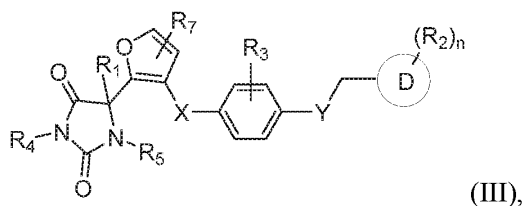
n is 1, 2, 3, 4, or 5;

p is 0, 1, 2, 3, 4, or 5; and

q is 0, 1, or 2;

provided that when ring D is phenyl, at least one of the following is true:

- (i) R_1 is alkyl;
 - (ii) R_2 is not methoxy, chloro, or trifluoromethyl; and
 - (iii) ring C is not unsubstituted phenyl.
2. The compound of claim 1, wherein ring C is phenyl.
 3. The compound of claim 1, wherein ring D is pyridinyl or pyridinyl N-oxide.
 4. The compound of claim 1, wherein R_4 is hydrogen.
 5. The compound of claim 1, wherein R_1 is alkyl.
 6. The compound of claim 1, wherein X is S and Z is CH_2 .
 7. The compound of claim 1, wherein X is S, Y is O, and Z is CH_2 .
 8. The compound of claim 1, wherein n is 1; and R_2 is alkyl, alkoxy, hydroxy, hydroxyalkyl or amide.
 9. The compound of claim 1, wherein n is 1; and R_2 is $-CH_3$, C_{1-4} alkoxy, $-OH$, $-CH_2OH$, or $-C(O)NH_2$.
 10. The compound of claim 1, being a compound of formula (III):

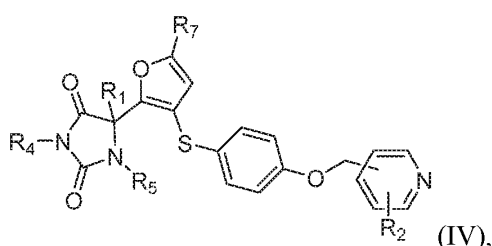


or a tautomer, stereoisomer, pharmaceutically acceptable salt, or solvate thereof, wherein:

- R_1 is hydrogen or C_{1-4} alkyl;
- X is S;
- Y is O, CH_2 , NH, or $N(CH_3)$;

each R₂ is independently selected from the group consisting of hydrogen, alkyl, hydroxyl, alkoxy, amide, and hydroxyalkyl;
 each R₃ is hydrogen, alkyl or halo;
 ring D is phenyl, pyridinyl, or pyridinyl N-oxide;
 each of R₄ and R₅ is hydrogen;
 R₇ is hydrogen or methyl; and
 n is 1 or 2.

11. A compound of formula (IV):



or a tautomer, stereoisomer, pharmaceutically acceptable salt, or solvate thereof,
 wherein:

R₁ is hydrogen or alkyl;

R₂ is selected from the group consisting of alkyl, amide, hydroxyl, alkoxy, and hydroxyalkyl;

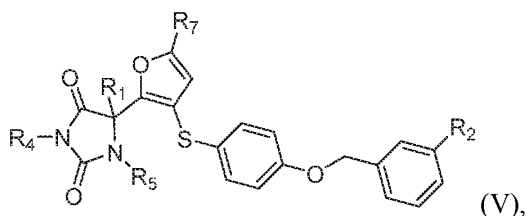
each of R₄ and R₅ is hydrogen; and

R₇ is methyl or hydrogen.

12. The compound of claim 11, wherein R₂ is -CH₃, C₁₋₄ alkoxy, -OH, -CH₂OH, or -C(O)NH₂.

13. The compound of claim 11, wherein R₁ is C₁₋₄ alkyl.

14. A compound of formula (V):



or a tautomer, stereoisomer, pharmaceutically acceptable salt, or solvate thereof,

wherein:

R₁ is alkyl;

R₂ is selected from the group consisting of alkyl, amide, alkoxy, hydroxyl, and hydroxyalkyl;

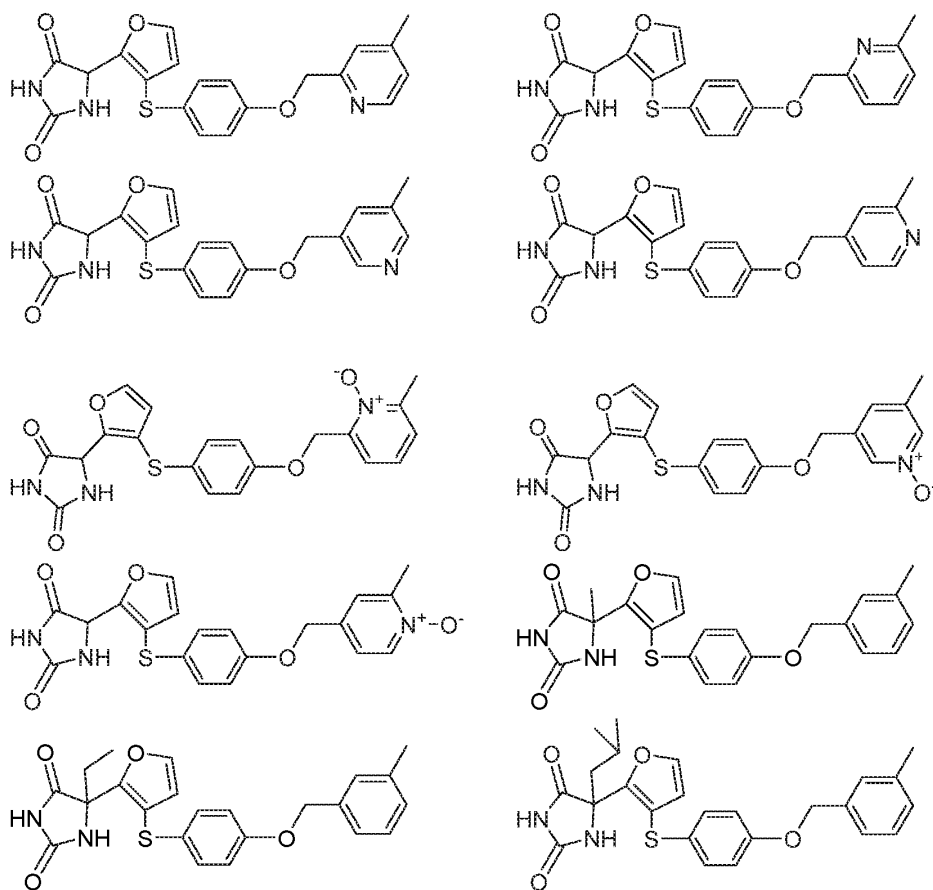
each of R₄ and R₅ is hydrogen; and

R₇ is methyl or hydrogen.

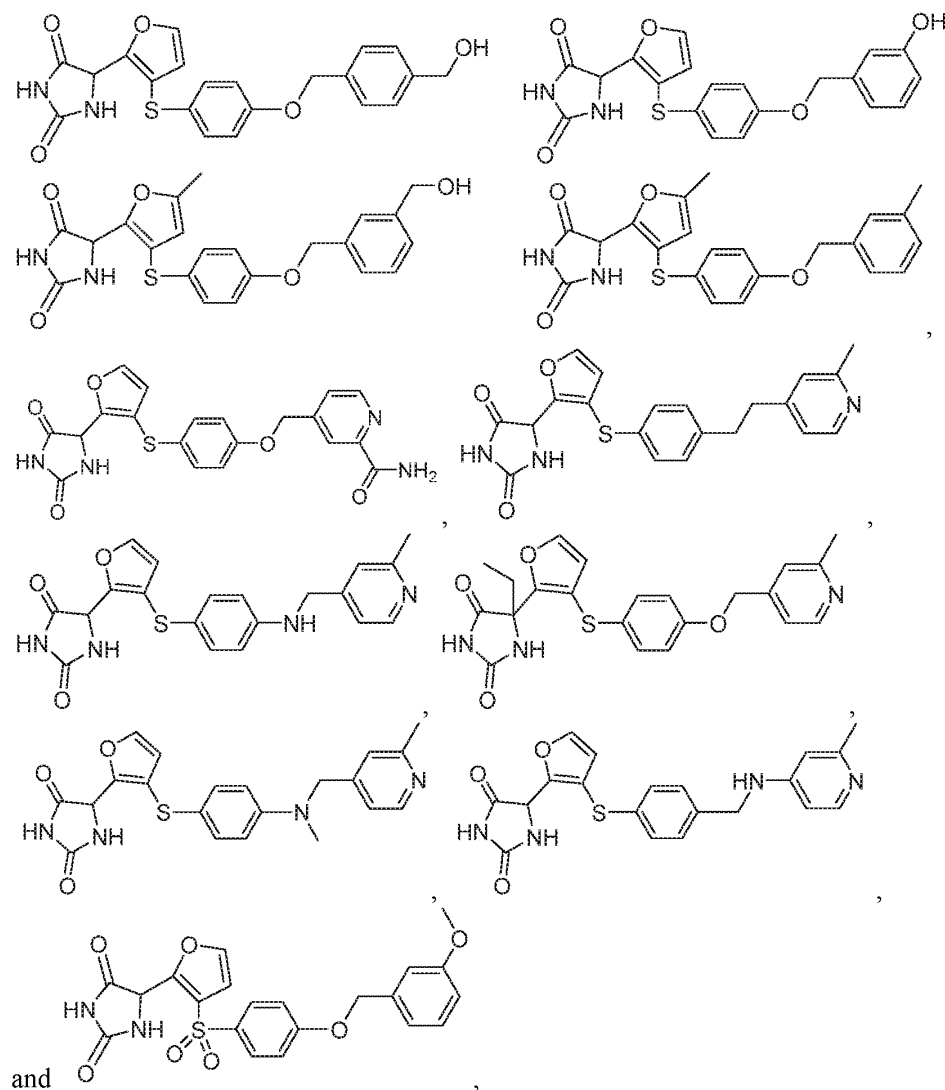
15. The compound of claim 14, wherein R₂ is -CH₃, C₁₋₄ alkoxy, -OH, -CH₂OH, or -C(O)NH₂.

16. The compound of claim 14, wherein R₁ is C₁₋₄ alkyl.

17. The compound of claim 1, being a compound selected from the group consisting of:







or a tautomer, stereoisomer, pharmaceutically acceptable salt, or solvate thereof.

18. The compound of claim 17, or a pharmaceutically acceptable salt thereof.

19. A pharmaceutical composition comprising the compound of any one of claims 1 to 18, and at least one pharmaceutically acceptable carrier.

20. A method of inhibiting macrophage elastase (MMP-12) in a subject in need thereof, the method comprising administering to the subject the pharmaceutical composition of claim 19.

21. A method of treating a disease mediated by macrophage elastase MMP-12 in a subject in need thereof, the method comprising administering to the subject the pharmaceutical composition of claim 19, wherein the disease is selected from the group consisting of asthma, chronic obstructive pulmonary disease (COPD), emphysema, acute lung injury, idiopathic pulmonary fibrosis (IPF), sarcoidosis, systemic sclerosis, liver fibrosis, nonalcoholic steatohepatitis (NASH), arthritis, cancer, heart disease, inflammatory bowel disease (IBD), acute kidney injury (AKI), chronic kidney disease (CKD), Alport syndrome, and nephritis.