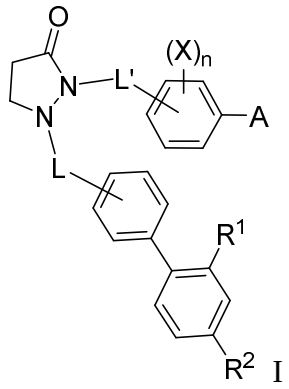
CLAIMS

1. A compound of the Formula I:



I

or a pharmaceutically acceptable salt solvate, hydrate, tautomer or optical isomer thereof, wherein;

A is OR', C(O)R', CO_2R', C(O)N(R')$_2$, C(O)N(R')S(O)$_2$R^3, S(O)$_2$R', S(O)$_2$OR', SO_2N(R')$_2$, C_{1-8} alkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

X is halo, OR', COOR', or C_{1-6} alkyl;

L and L' are each independently a C_{2-4} alkylene;

R^1 is H, halo, CN, NO_2, OR', SR', COOR', C_{1-6} alkoxy, or C_{1-6} alkyl;

R^2 is OR', OC(O)R^3, OC(O)OR^3, CO_2R', CON(R')$_2$, SO_2N(R')$_2$, SO_2R^3, OSO_2R^3, or OSO_2N(R')$_2$;

R^3 is C_{1-6} alkyl, C_{3-6} cycloalkyl, or a phenyl;

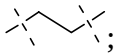
R' is H, C_{1-6} alkyl, or C_{3-6} cycloalkyl; and

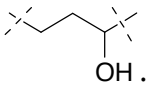
n is 0, 1, 2, or 3;

wherein at each occurrence, alkyl, alkylene, alkoxy, and cycloalkyl are each optionally and independently substituted with up to 3 instances of OH, SH, CN, NO_2, COOH, halo, or $COOC_{1-4}$ alkyl;

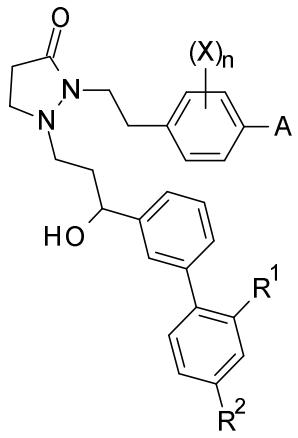
wherein at each occurrence, heterocycloalkyl, aryl, and heteroaryl are each optionally and independently substituted with up to 3 instances of OR', SR', CN, NO_2, CO_2R', halo, C_{1-4} alkyl, or oxo.

2. The compound according to claim 1, wherein

(i) L' is the group ; and/or

(ii) L is the group .

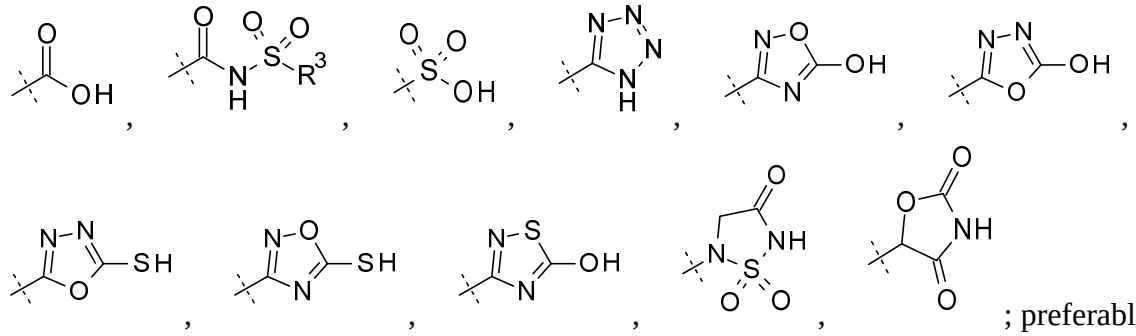
3. The compound according to claim 1 or 2, wherein the compound is a compound of Formula (1):

 (1),

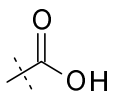
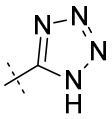
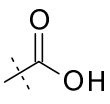
Or a pharmaceutically acceptable salt, solvate, hydrate, tautomer, or optical isomer thereof, wherein A, X, R^1, R^2 and n are the same as defined in claim 1.

4. The compound according to any one of claims 1-3, wherein A is selected from C(O)OR', $C(O)N(R')S(O)_2R^3$, $S(O)_2OR'$, C_{1-8} alkyl, heterocycloalkyl, or heteroaryl, wherein the heterocycloalkyl, and heteroaryl are each optionally and independently substituted with up to 3 instances of OR', SR', halo, C_{1-4} alkyl, or oxo.

5. The compound according to any one of claims 1 to 4, wherein A is selected from the group consisting of:



; preferably wherein A is:

 or  ; more preferably wherein A is  .

6. The compound according to any one of claims 1-5, wherein X is halo or OR', preferably wherein X is F or OH.

7. The compound according to claim 6, wherein X is F or OH, and n is 1, or 2.

8. The compound according to any one of claims 1-5 wherein n is 0.

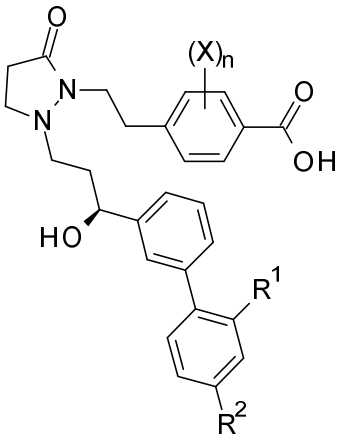
9. The compound according to any one of claims 1-8, wherein R^1 is H, OH, halo, CN, C_{1-6} alkoxy optionally substituted with 1-3 fluorine atoms or C_{1-6} alkyl optionally substituted with 1-3 fluorine atoms; preferably wherein R^1 is C_{1-6} alkyl optionally substituted with 1-3 fluorine atoms.

10. The compound according to claim 9, wherein R^1 is methyl.

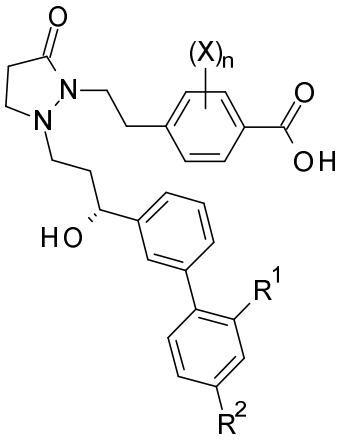
11. The compound according to any one of claims 1-10, wherein R^2 is OR', $CON(R')_2$, $SO_2N(R')_2$, or $OSO_2N(R')_2$, preferably wherein R^2 is OH, $CONH_2$, SO_2NH_2, or OSO_2NH_2.

12. The compound according to any one of claims 1-10, wherein R^2 is $CON(R')_2$, $SO_2N(R')_2$, OSO_2R^3, or $OSO_2N(R')_2$; preferably wherein R^2 is $CONH_2$, SO_2NH_2, or OSO_2NH_2.

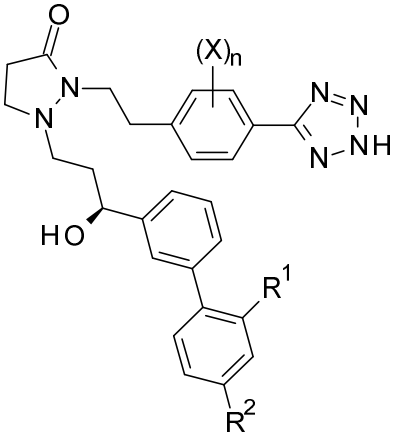
13. The compound according to any one of claims 1-12 which is a compound of Formula (2a), (2b), (2c), or (2d):



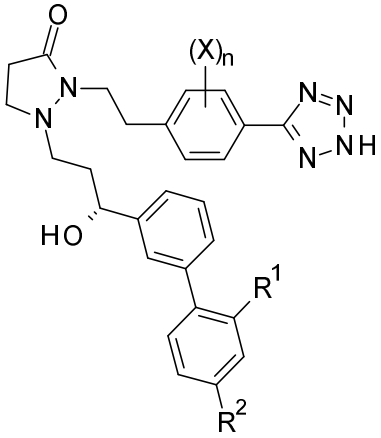
(2a)



(2b)



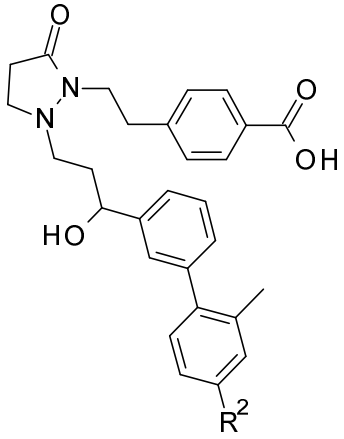
(2c)



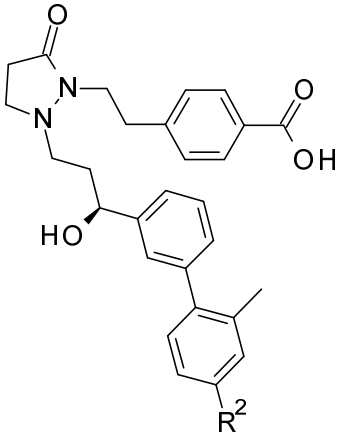
(2d),

or a pharmaceutically acceptable salt, solvate, hydrate or tautomer thereof, wherein X, R^1, R^2 and n are the same as defined in any preceding claim.

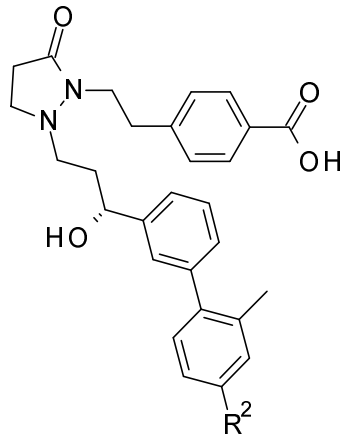
14. The compound according to claim 1, which is a compound of Formula (5), (5a), (5b), (6), (6a), (6b):



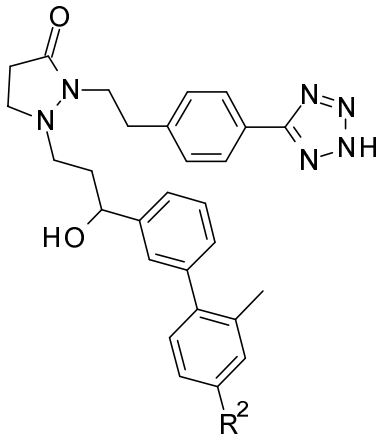
(5)



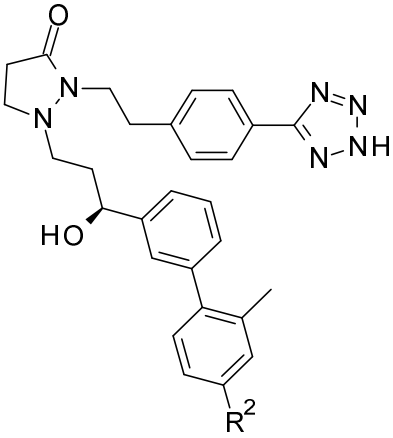
(5a)



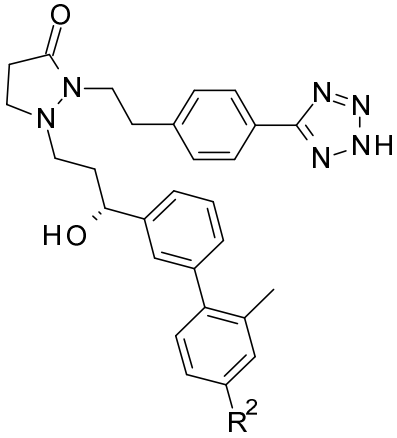
(5b)



(6)



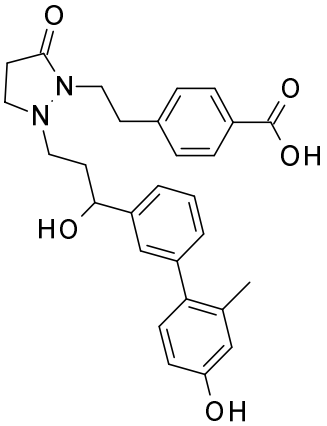
(6a)

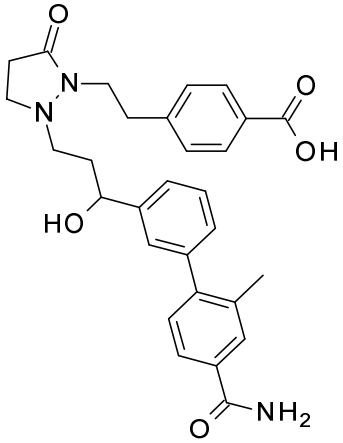


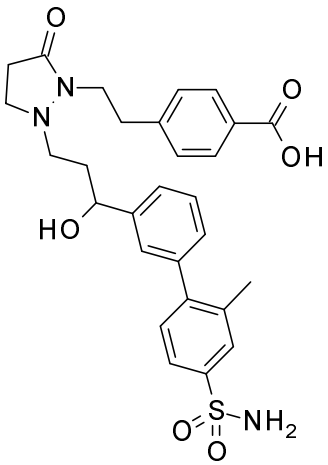
(6b)

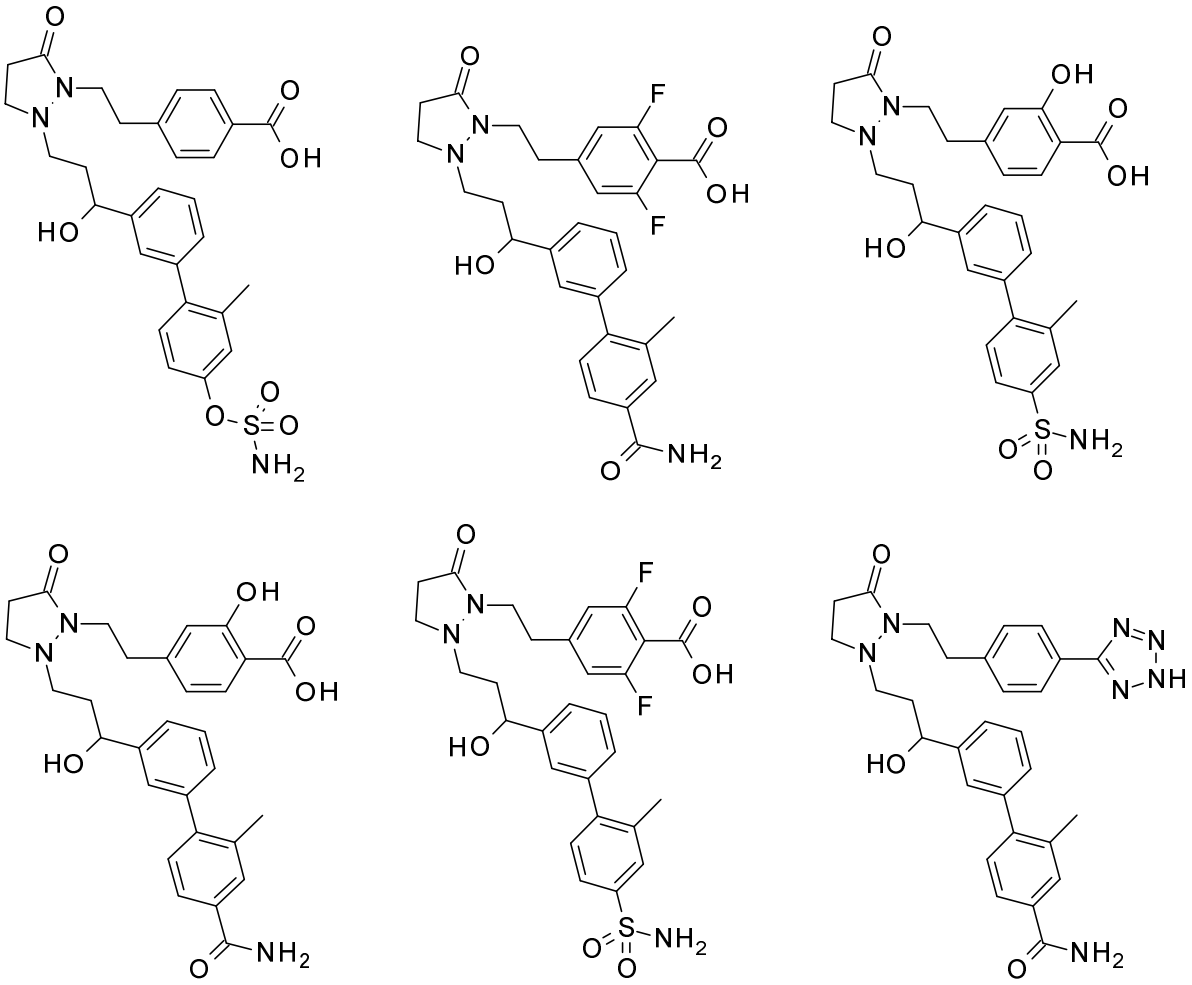
or a pharmaceutically acceptable salt, solvate, hydrate or tautomer thereof.

15. The compound according to claim 1, wherein the compound is selected from the group consisting of:









or a pharmaceutically acceptable salt, solvate, hydrate, tautomer, or optical isomer thereof.

16. A pharmaceutical composition comprising a compound, pharmaceutically acceptable salt, solvate, hydrate, or tautomer, according to any one of claims 1-15 and a pharmaceutically acceptable excipient.

17. The pharmaceutical composition according to claim 16, wherein the composition further comprises at least one additional therapeutic agent selected from the group consisting of aminosalicylates, corticosteroids, immunomodulators and combinations thereof.

18. A kit comprising a compound, pharmaceutically acceptable salt, solvate, hydrate, tautomer or optical isomer according to any one of claims 1-15 and at least one additional

therapeutic agent selected from the group consisting of aminosalicylates, corticosteroids, immunomodulators and combinations thereof.

19. A compound according to any one of claims 1 to 15, a composition according to claim 16 or 17, or a kit according to claim 18, for use as a medicament.

20. Use of the compound according to any one of claims 1 to 15, or the composition according to claim 16 or 17, in the manufacture of a medicament for the treatment of an EP4 receptor mediated disease.

21. The use according to claim 20, wherein the EP4 receptor mediated disease is a gastrointestinal disorder.

22. The use according to claim 21, wherein the gastrointestinal disorder is selected from the group consisting of constipation disorders, constipation-predominant irritable bowel syndrome, mixed type irritable bowel syndrome, chronic idiopathic constipation, gastrointestinal symptoms associated with Parkinson’s disease, gastrointestinal symptoms associated with cystic fibrosis, intestinal dysmotility, postoperative ileus, food allergy or food intolerance, celiac disease, gastrointestinal motility disorders, functional gastrointestinal disorders, drug induced enteropathy, NSAID induced gastric and intestinal injury, chemotherapy induced mucositis, gastroesophageal reflux disease (GERD), duodenogastric reflux, diarrhoeal diseases, immune mediated gastrointestinal diseases, Crohn's disease, ulcerative colitis, inflammatory bowel disease, and ischemic colitis,

23. The use according to claim 20, wherein the EP4 receptor mediated disease is a pulmonary disease or condition.

24. The use according to claim 23, wherein the pulmonary disease or condition is selected from chronic obstructive pulmonary diseases, asthma, chronic bronchitis, cystic fibrosis, emphysema, chronic idiopathic cough, hyperactive airway disorder, and idiopathic pulmonary fibrosis.