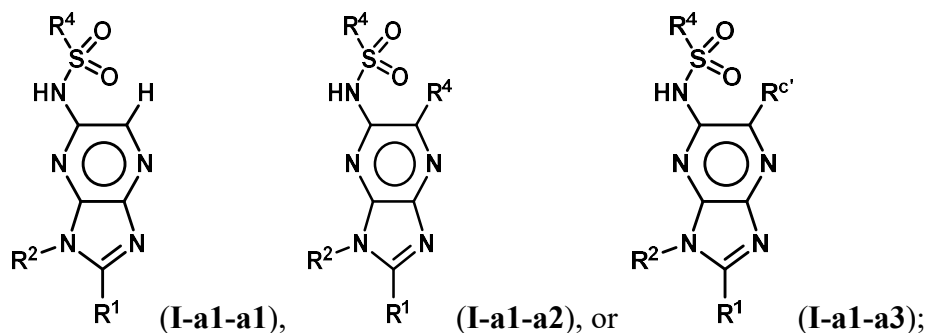


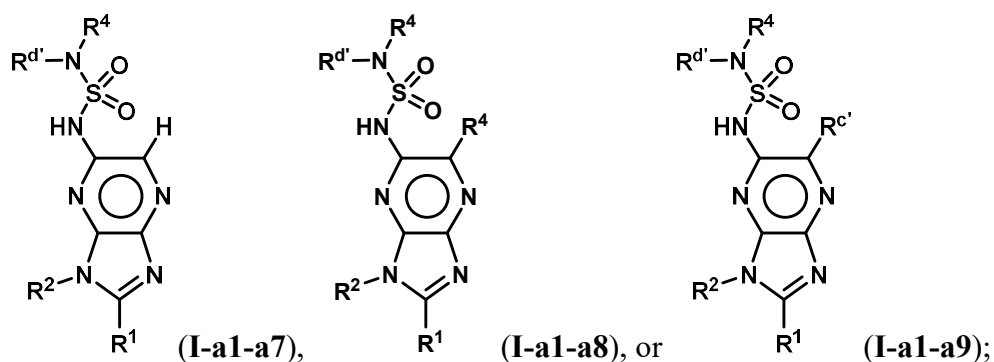
CLAIMS:

1. A compound of Formula (I-a1-a1), (I-a1-a2), or (I-a1-a3):



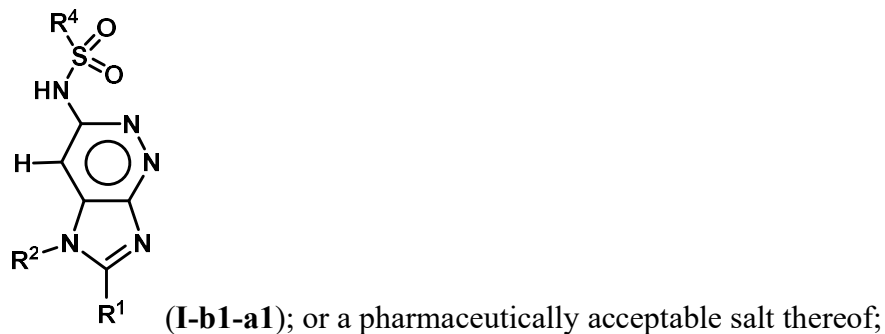
or a pharmaceutically acceptable salt thereof;

or a compound of Formula (I-a1-a7), (I-a1-a8), or (I-a1-a9):



wherein $R^{d'}$ is H or R^d (e.g., H or C_{1-3} alkyl); or a pharmaceutically acceptable salt thereof;

or a compound of Formula (I-b1-a1):



wherein:

R^1 is:

(i) $-(Y^1)_n-Y^2$, wherein:

- **n** is 0 or 1;
- **Y¹** is C₁₋₆ alkylene, which is optionally substituted with from 1-6 **R^a**; and
- **Y²** is:
 - (a) C₃₋₁₀ cycloalkyl, which is optionally substituted with from 1-4 **R^b**;
 - (b) C₆₋₁₀ aryl, which is optionally substituted with from 1-4 **R^c**;
 - (c) heteroaryl including from 5-10 ring atoms, wherein from 1-4 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), N(**R^d**), O, and S, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^c**, or
 - (d) heterocyclyl including from 3-10 ring atoms, wherein from 1-3 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), N(**R^d**), and O, and wherein one or more of the heterocyclyl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^b**,

OR

(ii) **-Z¹-Z²-Z³**, wherein:

- **Z¹** is C₁₋₃ alkylene, which is optionally substituted with from 1-4 **R^a**;
- **Z²** is -N(H)-, -N(**R^d**)-, -O-, or -S-; and
- **Z³** is C₂₋₇ alkyl, which is optionally substituted with from 1-4 **R^a**;

OR

(iii) C₃₋₁₀ alkyl, optionally substituted with from 1-6 independently selected **R^a**;

OR

(iv) **-Z⁴-Z⁵-Z⁶-Y²** wherein:

- **Z⁴** is C₁₋₃ alkylene, which is optionally substituted with from 1-4 **R^a**;
- **Z⁵** is -N(H)-, -N(**R^d**)-, -O-, or -S-;
- **Z⁶** is C₁₋₄ alkylene, which is optionally substituted with from 1-4 **R^a**; and

- Y^2 is as defined above;

R^2 is:

(i) C_{6-10} aryl, which is optionally further substituted with from 1-4 R^c ;

(ii) heteroaryl including from 5-10 ring atoms, wherein from 1-4 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), $N(R^d)$, O, and S, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected R^c ;

(iii) C_{3-10} cycloalkyl, which is optionally substituted with from 1-4 R^b ;

(iv) heterocyclyl including from 3-10 ring atoms, wherein from 1-3 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), $N(R^d)$, and O, and wherein one or more of the heterocyclyl ring carbon atoms are optionally substituted with from 1-4 independently selected R^b ; or

(v) C_{1-10} alkyl, which is optionally substituted with from 1-6 independently selected R^a ;

each occurrence of R^4 is, independently:

(i) $-(Y^3)_p-Y^4$, wherein:

- p is 0 or 1;
- Y^3 is C_{1-6} alkylene or C_{1-6} alkenylene, each of which is optionally substituted with from 1-6 R^a ; and
- Y^4 is:
 - (a) C_{3-6} cycloalkyl, which is optionally substituted with from 1-4 R^b ,
 - (b) C_{6-10} aryl, which is optionally substituted with from 1-4 R^c ;
 - (c) heteroaryl including from 5-10 ring atoms, wherein from 1-4 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), $N(R^d)$, O, and S, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected R^c , or
 - (d) heterocyclyl including from 3-10 ring atoms, wherein from 1-3 ring atoms are heteroatoms, each independently selected from the group consisting of N,

N(H), N(**R^d**), and O, and wherein one or more of the heterocyclyl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^b**,

OR

(ii) C₁₋₁₀ alkyl, C₁₋₁₀ alkenyl, or C₁₋₁₀ alkynyl, each of which is optionally substituted with from 1-6 independently selected **R^a**;

each occurrence of **R^a** is independently selected from the group consisting of: -OH; -F; -Cl, -Br; -NR^eR^f; C₁₋₄ alkoxy; C₁₋₄ haloalkoxy; -C(=O)O(C₁₋₄ alkyl); -C(=O)(C₁₋₄ alkyl); -C(=O)OH; -CON(R')(R''); -S(O)₁₋₂(NR'R''); -S(O)₁₋₂(C₁₋₄ alkyl); cyano, and C₃₋₆ cycloalkyl optionally substituted with from 1-4 independently selected C₁₋₄ alkyl;

each occurrence of **R^b** is independently selected from the group consisting of: C₁₋₆ alkyl; C₁₋₄ haloalkyl; -OH; oxo; -F; -Cl; -Br; -NR^eR^f; C₁₋₄ alkoxy; C₁₋₄ haloalkoxy; -C(=O)(C₁₋₄ alkyl); -C(=O)O(C₁₋₄ alkyl); -C(=O)OH; -C(=O)N(R')(R''); -S(O)₁₋₂(NR'R''); -S(O)₁₋₂(C₁₋₄ alkyl); cyano; and C₃₋₆ cycloalkyl optionally substituted with from 1-4 independently selected C₁₋₄ alkyl;

each occurrence of **R^c** is independently selected from the group consisting of:

(i) halo;

(ii) cyano;

(iii) C₁₋₆ alkyl;

(iv) C₂₋₆ alkenyl;

(v) C₂₋₆ alkynyl;

(vi) C₁₋₄ haloalkyl;

(vii) C₁₋₄ alkoxy;

(viii) C₁₋₄ haloalkoxy;

(ix) -(C₀₋₃ alkylene)-C₃₋₆ cycloalkyl optionally substituted with from 1-4 independently selected C₁₋₄ alkyl;

(x) -S(O)₁₋₂(C₁₋₄ alkyl);

(xi) -NR^eR^f;

- (xii) -OH;
- (xiii) -S(O)₁₋₂(NR'R'');
- (xiv) -C₁₋₄ thioalkoxy;
- (xv) -NO₂;
- (xvi) -C(=O)(C₁₋₄ alkyl);
- (xvii) -C(=O)O(C₁₋₄ alkyl);
- (xviii) -C(=O)OH,
- (xix) -C(=O)N(R')(R''), and
- (xx) C₃₋₆ cycloalkoxy;

each occurrence of **R^c** is independently selected from the group consisting of:

- (i) halo;
- (ii) cyano;
- (iii) -OH;
- (iv) -NO₂;
- (v) -C(=O)(C₁₋₄ alkyl);
- (vi) -C(=O)O(C₁₋₄ alkyl);
- (vii) -C(=O)OH; and
- (viii) -NH₂;

R^d is selected from the group consisting of: C₁₋₆ alkyl; C₃₋₆ cycloalkyl; -C(O)(C₁₋₄ alkyl); -C(O)O(C₁₋₄ alkyl); -CON(R')(R''); -S(O)₁₋₂(NR'R''); -S(O)₁₋₂(C₁₋₄ alkyl); -OH; and C₁₋₄ alkoxy;

each occurrence of **R^e** and **R^f** is independently selected from the group consisting of: H; C₁₋₆ alkyl; C₃₋₆ cycloalkyl; -C(O)(C₁₋₄ alkyl); -C(O)O(C₁₋₄ alkyl); -CON(R')(R''); -S(O)₁₋₂(NR'R''); -S(O)₁₋₂(C₁₋₄ alkyl); -OH; and C₁₋₄ alkoxy; or **R^e** and **R^f** together with the nitrogen atom to which each is attached forms a ring including from 3-8 ring atoms, wherein the ring includes: (a) from 1-7 ring carbon atoms, each of which is substituted with from 1-2

substituents independently selected from H and C₁₋₃ alkyl; and (b) from 0-3 ring heteroatoms (in addition to the nitrogen atom attached to **R'** and **R''**), which are each independently selected from the group consisting of N(**R^d**), O, and S; and

each occurrence of **R'** and **R''** is independently selected from the group consisting of: H and C₁₋₄ alkyl; or **R'** and **R''** together with the nitrogen atom to which each is attached forms a ring including from 3-8 ring atoms, wherein the ring includes: (a) from 1-7 ring carbon atoms, each of which is substituted with from 1-2 substituents independently selected from H and C₁₋₃ alkyl; and (b) from 0-3 ring heteroatoms (in addition to the nitrogen atom attached to **R'** and **R''**), which are each independently selected from the group consisting of N(**R^d**), O, and S.

2. The compound of claim 1, wherein **R¹** is -(**Y¹**)_n-**Y²**, and/or wherein **n** is 0.
3. The compound of any one of claims 1 or 2, wherein **Y²** is heteroaryl including from 5-10 ring atoms, wherein from 1-4 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), N(**R^d**), O, and S, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^c**.
4. The compound of any one of claims 1-3, wherein **Y²** is heteroaryl including 6 ring atoms, wherein from 1-2 ring atoms are N, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^c**.
5. The compound of claim 4, wherein **Y²** is pyridyl (e.g., 2-pyridyl or 6-pyridyl), wherein one or more of the ring carbon atoms are optionally substituted with from 1-4 independently selected **R^c**.
6. The compound of any one of claims 3-5, wherein each occurrence of **R^c** is independently selected from the group consisting of:

(iii) C₁₋₆ alkyl;

(iv) C₂₋₆ alkenyl;

(v) C₂₋₆ alkynyl;

(vi) C₁₋₄ haloalkyl;

(vii) C₁₋₄ alkoxy;

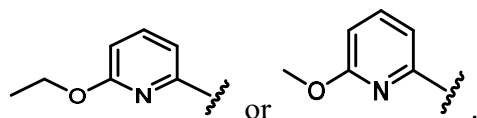
(viii) C₁₋₄ haloalkoxy;

(ix) $-(C_{0-3} \text{ alkylene})-C_{3-6}$ cycloalkyl optionally substituted with from 1-4 independently selected C_{1-4} alkyl;

(xiv) $-C_{1-4}$ thioalkoxy; and

(xx) C_{3-6} cycloalkoxy.

7. The compound of any one of claims 1-6, wherein R^1 is:



8. The compound of any one of claims 1-5 or 7, wherein R^2 is C_{6-10} aryl, which is optionally substituted with from 1-4 R^c .

9. The compound of any one of claims 1-5 or 7-8, wherein R^2 is phenyl, which is optionally substituted with from 1-4 R^c .

10. The compound of claim 8 or 9, wherein each occurrence of R^c is independently selected from the group consisting of:

(i) halo (e.g., F);

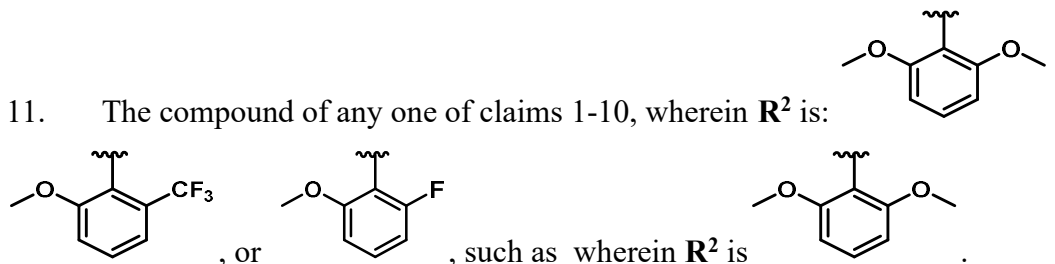
(vi) C_{1-4} haloalkyl (e.g., CF_3);

(vii) C_{1-4} alkoxy;

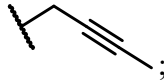
(viii) C_{1-4} haloalkoxy; and

(xiv) $-C_{1-4}$ thioalkoxy.

11. The compound of any one of claims 1-10, wherein R^2 is:



12. The compound of any one of claims 1-11, wherein each occurrence of R^c is independently selected from halo.

13. The compound of any one of claims 1-12, wherein R^4 is $-(Y^3)_p-Y^4$.
14. The compound of any one of claims 1-13, wherein Y^3 is C_{1-3} alkylene.
15. The compound of any one of claims 1-14, wherein Y^4 is C_{6-10} aryl, which is optionally substituted with from 1-4 R^c .
16. The compound of any one of claims 1-14, wherein Y^4 is C_{3-6} (e.g., C_{3-4} or C_6) cycloalkyl, which is optionally substituted with from 1-4 R^b , or wherein Y^4 is heteroaryl including from 5-10 ring atoms, wherein from 1-4 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), N(R^d), O, and S, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected R^c , or wherein Y^4 is heterocyclyl including from 3-10 ring atoms, wherein from 1-3 ring atoms are heteroatoms, each independently selected from the group consisting of N, N(H), N(R^d), and O, and wherein one or more of the heterocyclyl ring carbon atoms are optionally substituted with from 1-4 independently selected R^b .
17. The compound of any one of claims 1-12, wherein R^4 is C_{1-10} alkyl, optionally substituted with from 1-6 independently selected R^a .
18. The compound of any one of claims 1-12 and 17, wherein R^4 is C_{1-6} alkyl, optionally substituted with from 1-6 independently selected R^a .
19. The compound of any one of claims 1-12, wherein R^4 is C_{2-10} (e.g., C_{2-4}) alkynyl, which is optionally substituted with from 1-6 (e.g., from 1-3) independently selected R^a , or wherein R^4 is C_{2-10} (e.g., C_{2-4}) alkenyl, which is optionally substituted with from 1-6 (e.g., from 1-3) independently selected R^a .
20. The compound of claim 19, wherein R^4 is unsubstituted C_{2-4} alkynyl such as ; or R^4 is unsubstituted C_{2-4} alkenyl such as vinyl.
21. The compound of any one of claims 1-12, wherein:
- R^4 is selected from the group consisting of:
- (i) C_{1-6} alkyl optionally substituted with 1-2 R^a ; and

(ii) $-(Y^3)_p-Y^4$.

22. The compound of any one of claims 1-12, wherein:

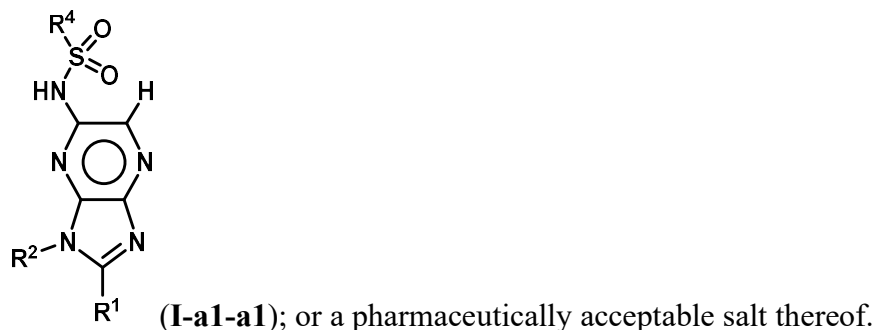
R^4 is selected from the group consisting of:

(i) C_{1-6} alkyl optionally substituted with 1-2 R^a ;

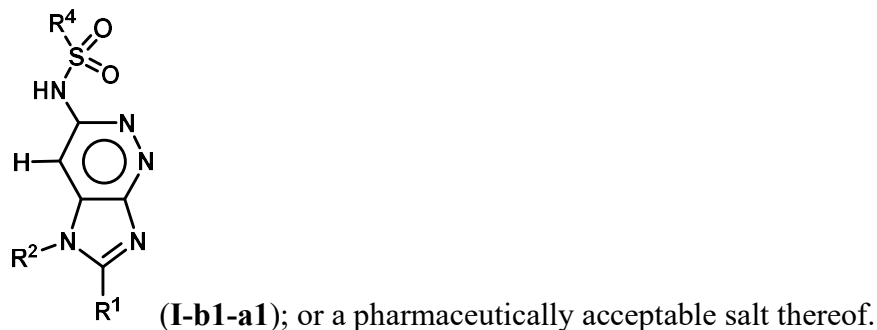
(ii) $-(Y^3)_p-Y^4$; and

(iii) C_{2-10} alkenyl or C_{2-10} alkynyl, each of which is optionally substituted with from 1-3 independently selected R^a .

23. The compound of claim 1, wherein the compound is of Formula **(I-a1-a1)**:



24. The compound of claim 1, wherein the compound is of Formula **(I-b1-a1)**:



25. The compound of any one of claims 23 or 24, wherein R^4 is selected from the group consisting of:

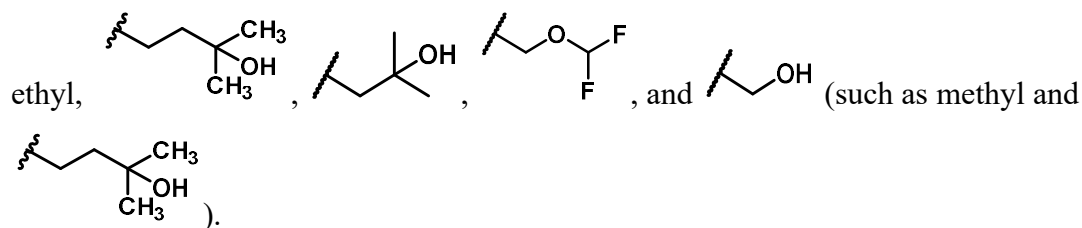
(i) C_{1-10} alkyl, optionally substituted with from 1-6 independently selected R^a ;

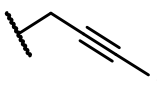
(ii) $-(Y^3)_p-Y^4$; and

(iii) C_{2-10} alkenyl or C_{2-10} alkynyl, each of which is optionally substituted with from 1-3 independently selected R^a .

26. The compound of any one of claims 23-25, wherein:
- **R⁴** is C₁₋₁₀ alkyl, optionally substituted with from 1-6 independently selected **R^a**; or
 - **R⁴** is C₁₋₆ alkyl, optionally substituted with from 1-6 independently selected **R^a**; or
 - **R⁴** is C₁₋₆ alkyl, optionally substituted with from 1-2 independently selected **R^a**; or
 - **R⁴** is C₂₋₁₀ (e.g., C₂₋₄ alkynyl) alkynyl, which is optionally substituted with from 1-6 (e.g., from 1-3) independently selected **R^a**; or
 - **R⁴** is C₂₋₁₀ (e.g., C₂₋₄ alkenyl) alkenyl, which is optionally substituted with from 1-6 (e.g., from 1-3) independently selected **R^a** (e.g., unsubstituted C₂₋₄ alkenyl such as vinyl); and wherein each **R^a**, when present, is independently selected from the group consisting of: -F; -OH; C₁₋₄ alkoxy; and C₁₋₄ haloalkoxy, such as wherein each occurrence of **R^a** is independently -OH.

27. The compound of claim 26, wherein **R⁴** is selected from the group consisting of: methyl,



28. The compound of claim 26, wherein **R⁴** is unsubstituted C₂₋₄ alkynyl such as .

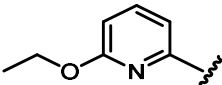
29. The compound of any one of claims 23-25, wherein:

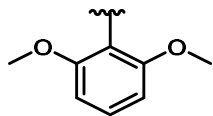
R¹ is -(Y¹)_n-Y²; and

R² is C₆₋₁₀ aryl, which is optionally substituted with from 1-4 **R^c**.

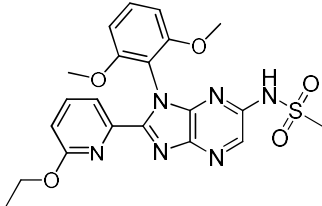
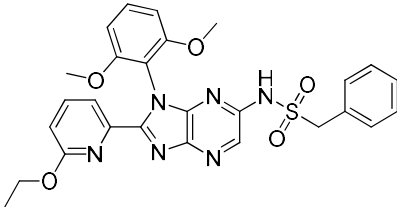
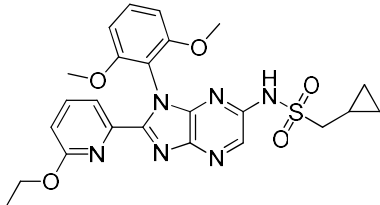
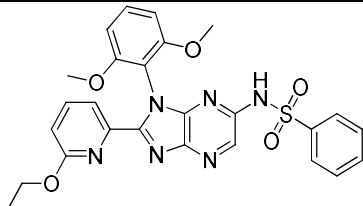
30. The compound of claim 29, wherein **Y²** is heteroaryl including 6 ring atoms, wherein from 1-2 ring atoms are N, and wherein one or more of the heteroaryl ring carbon atoms are optionally substituted with from 1-4 independently selected **R^c**.

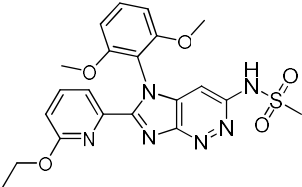
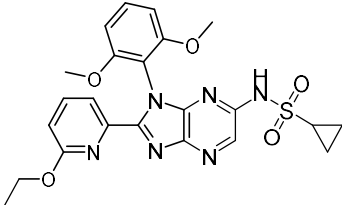
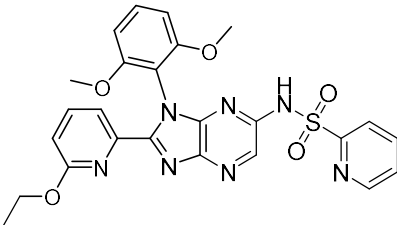
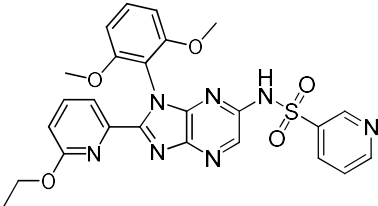
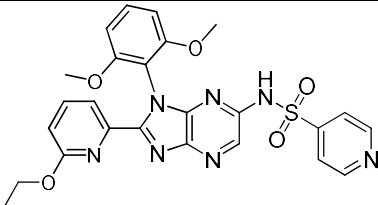
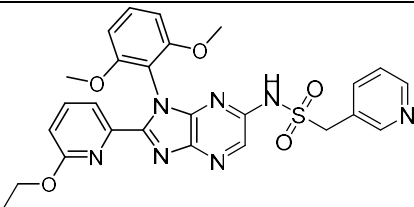
31. The compound of claim 29 or 30, wherein **R²** is phenyl, which is optionally substituted with from 1-4 **R^c**.

32. The compound of any one of claims 23-25, wherein **R**¹ is ; and **R**² is



33. The compound of claim 1, wherein the compound is selected from the group consisting of those in the table below:

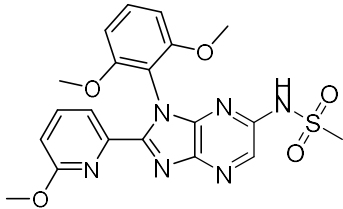
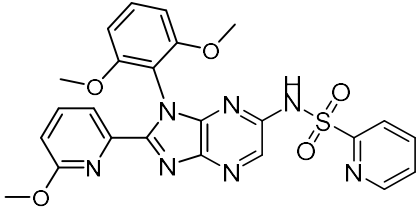
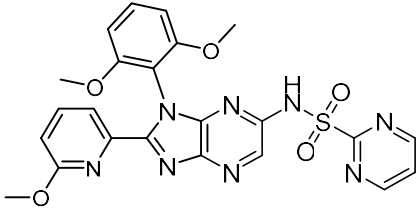
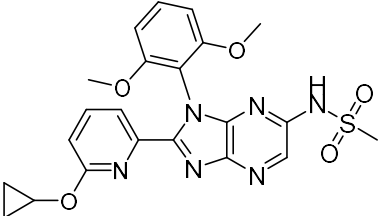
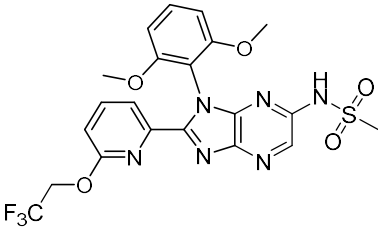
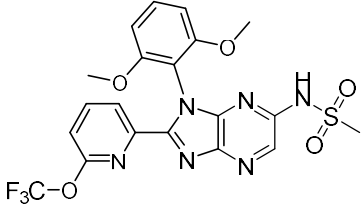
Example #	Structure	IUPAC Name
2		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
3		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-phenylmethanesulfonamide
4		1-cyclopropyl-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
5		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)benzenesulfonamide

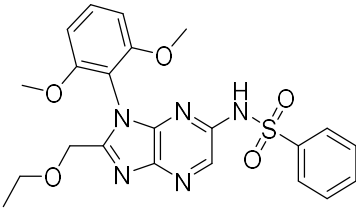
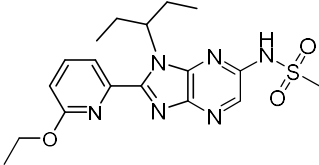
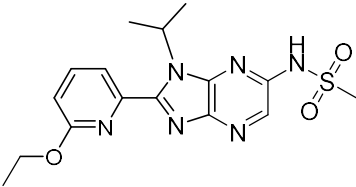
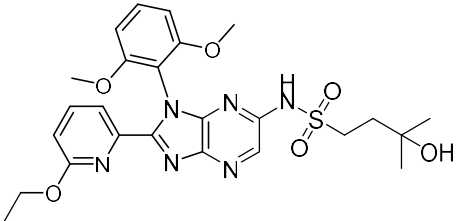
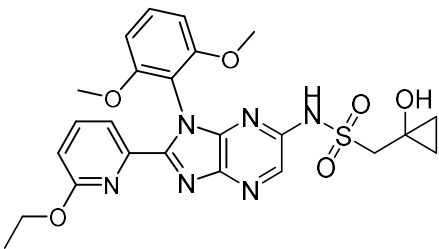
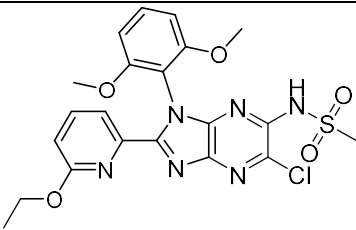
Example #	Structure	IUPAC Name
21		N-(5-(2,6-dimethoxyphenyl)-6-(6-ethoxypyridin-2-yl)-5H-imidazo[4,5-c]pyridazin-3-yl)methanesulfonamide
22		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)cyclopropanesulfonamide
23		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-2-sulfonamide
24		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-3-sulfonamide
25		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-4-sulfonamide
26		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyridin-3-yl)methanesulfonamide

Example #	Structure	IUPAC Name
27		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyridin-2-yl)methanesulfonamide
28		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyrimidin-2-yl)methanesulfonamide
29		2-cyclopropyl-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)ethanesulfonamide
30		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)oxetane-3-sulfonamide
31		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)cyclobutanesulfonamide
33		cis-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-3-hydroxycyclobutane-1-sulfonamide

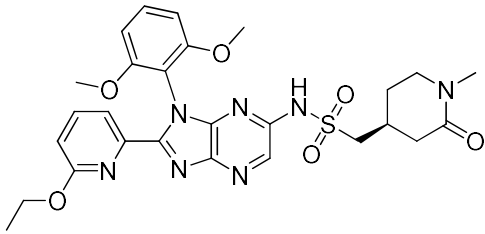
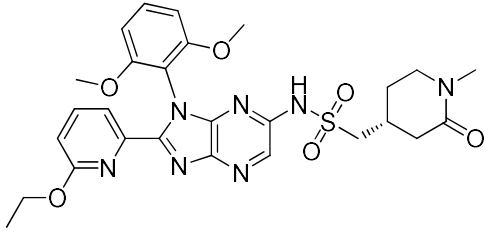
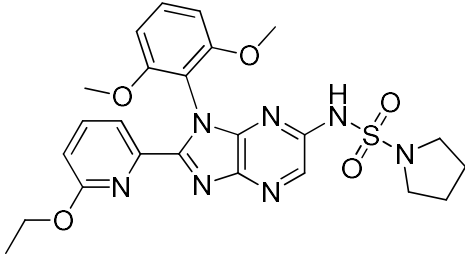
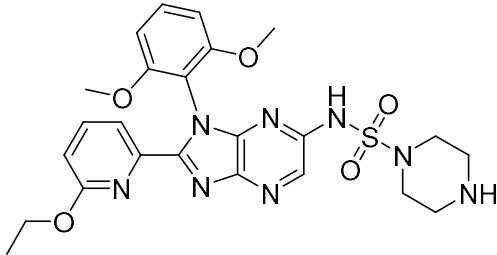
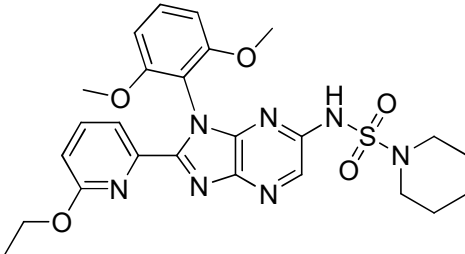
Example #	Structure	IUPAC Name
34		trans-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-3-hydroxycyclobutane-1-sulfonamide
35		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyrimidin-5-yl)methanesulfonamide
36		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)tetrahydro-2H-pyran-4-sulfonamide
37		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)morpholine-4-sulfonamide
38		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(piperidin-4-yl)methanesulfonamide
39		trans-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-4-hydroxycyclohexane-1-sulfonamide

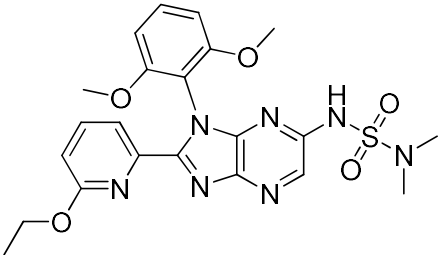
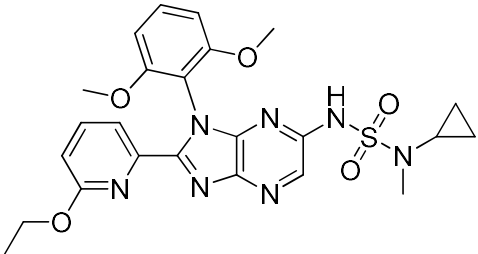
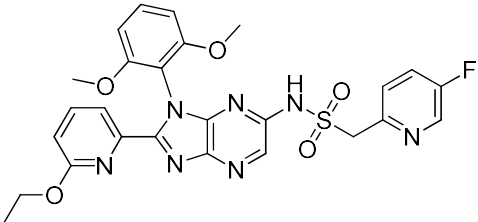
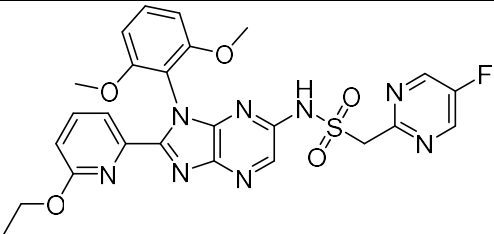
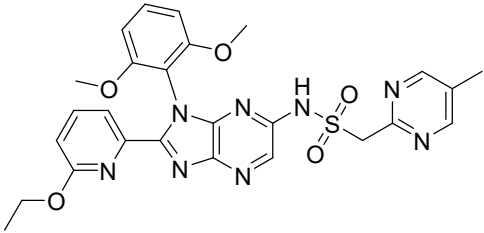
Example #	Structure	IUPAC Name
40		cis-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-4-hydroxycyclohexane-1-sulfonamide
41		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyrimidine-2-sulfonamide
42		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-4-hydroxypiperidine-1-sulfonamide
48		N-(2-(6-ethoxypyridin-2-yl)-1-(2-methoxy-6-(trifluoromethyl)phenyl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
49		N-(2-(6-ethoxypyridin-2-yl)-1-(3-methoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
50		N-(benzylsulfonyl)-4-(2-fluoro-6-methoxyphenyl)-5-(6-methoxypyridin-2-yl)-4H-1,2,4-triazole-3-carboxamide

Example #	Structure	IUPAC Name
51		N-(1-(2,6-dimethoxyphenyl)-2-(6-methoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
52		N-(1-(2,6-dimethoxyphenyl)-2-(6-methoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-2-sulfonamide
53		N-(1-(2,6-dimethoxyphenyl)-2-(6-methoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyrimidine-2-sulfonamide
54		N-(2-(6-cyclopropoxy)pyridin-2-yl)-1-(2,6-dimethoxyphenyl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
55		N-(1-(2,6-dimethoxyphenyl)-2-(6-(trifluoroethoxy)pyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
56		N-(1-(2,6-dimethoxyphenyl)-2-(6-(trifluoromethoxy)pyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide

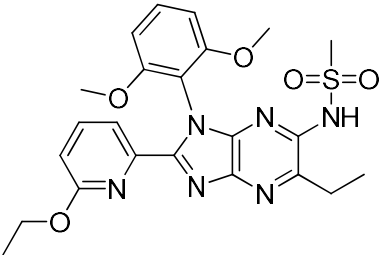
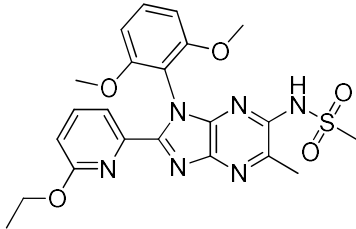
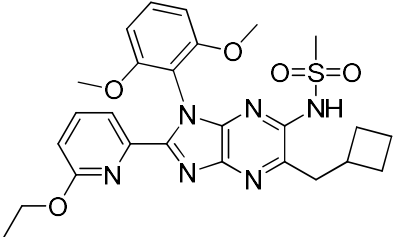
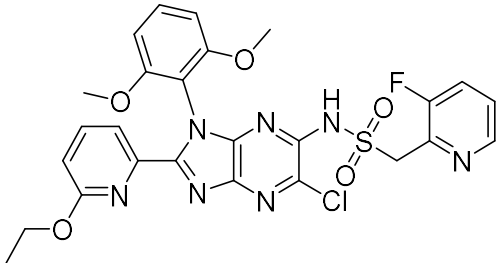
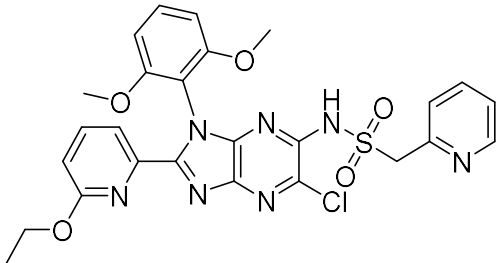
Example #	Structure	IUPAC Name
57		N-(1-(2,6-dimethoxyphenyl)-2-(ethoxymethyl)-1H-imidazo[4,5-b]pyrazin-6-yl)benzenesulfonamide
58		N-(2-(6-ethoxypyridin-2-yl)-1-(pentan-3-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
59		N-(2-(6-ethoxypyridin-2-yl)-1-isopropyl-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
60		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-3-hydroxy-3-methylbutane-1-sulfonamide
61		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(1-hydroxycyclopropyl)methanesulfonamide
64		N-(5-chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide

Example #	Structure	IUPAC Name
65		N-(5-(cyclopropylmethyl)-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
66		N-(5-(2-cyclopropylethyl)-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
68		N-(1-(2,4-dimethoxypyridin-3-yl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
69		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyrazin-2-yl)methanesulfonamide
70		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-2-hydroxy-2-methylpropane-1-sulfonamide

Example #	Structure	IUPAC Name
71		(S)-N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(1-methyl-2-oxopiperidin-4-yl)methanesulfonamide
72		(R)-N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(1-methyl-2-oxopiperidin-4-yl)methanesulfonamide
73		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyrrolidine-1-sulfonamide
74		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)piperazine-1-sulfonamide
75		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)piperidine-1-sulfonamide

Example #	Structure	IUPAC Name
76		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-N', N'-dimethylsulfamide
77		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-N'-methyl-N'-cyclopropylsulfamide
78		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-fluoropyridin-2-yl)methanesulfonamide
79		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-fluoropyrimidin-2-yl)methanesulfonamide
80		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-methylpyrimidin-2-yl)methanesulfonamide

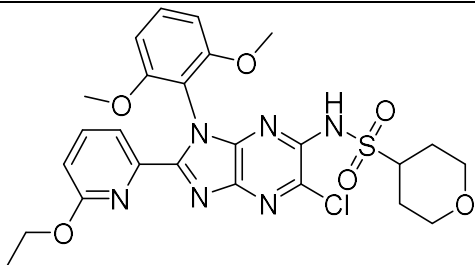
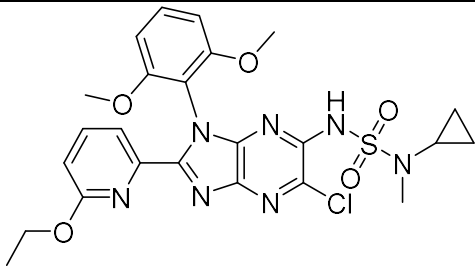
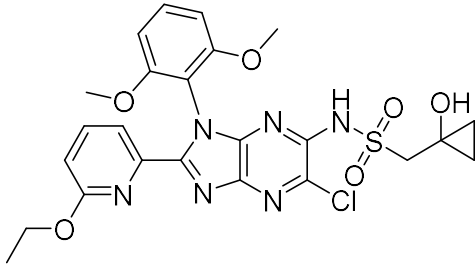
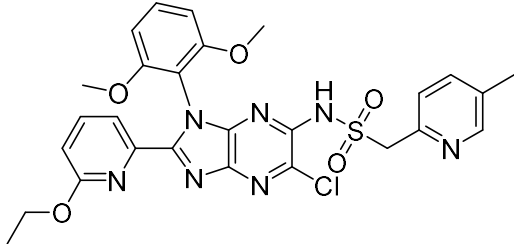
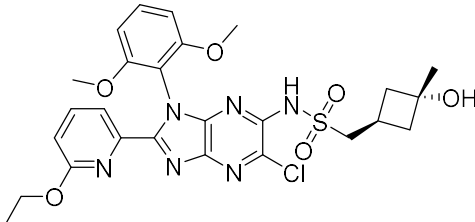
Example #	Structure	IUPAC Name
81		trans-N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-((1r,3r)-3-hydroxy-3-methylcyclobutyl)methanesulfonamide
82		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)but-2-yn-1-sulfonamide
83		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-methylpyridin-2-yl)methanesulfonamide
84		N-(1-(2,4-Dimethoxypyridin-3-yl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
85		N-(1-(2,4-Dimethoxypyridin-3-yl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide]

Example #	Structure	IUPAC Name
86		N-(1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-ethyl-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
87		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-methyl-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
88		N-(5-(Cyclobutylmethyl)-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
94		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(3-fluoropyridin-2-yl)methanesulfonamide
95		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyridin-2-yl)methanesulfonamide

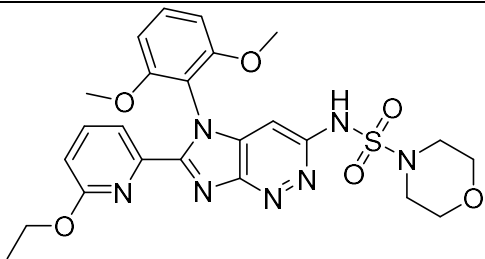
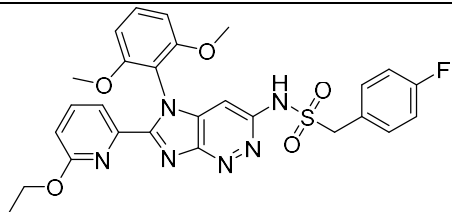
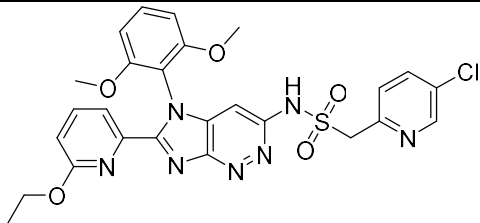
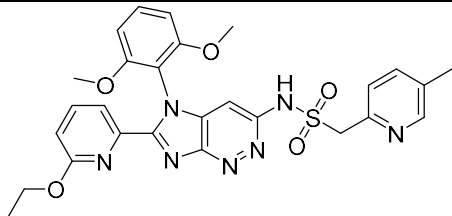
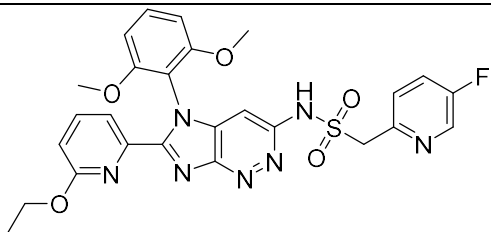
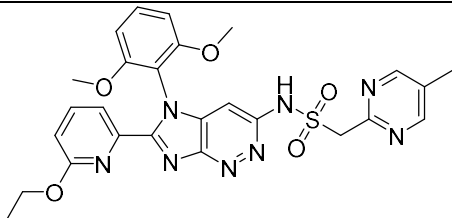
Example #	Structure	IUPAC Name
96		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-fluoropyridin-2-yl)methanesulfonamide
97		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)cyclopropanesulfonamide
98		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)morpholine-4-sulfonamide
99		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-5-fluoropyridine-2-sulfonamide
100		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(2-fluoro-4-methylphenyl)methanesulfonamide

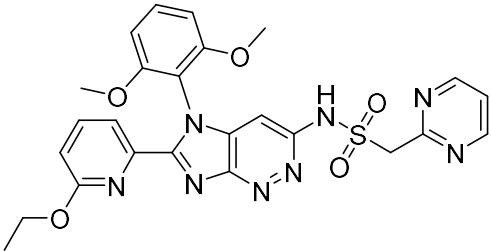
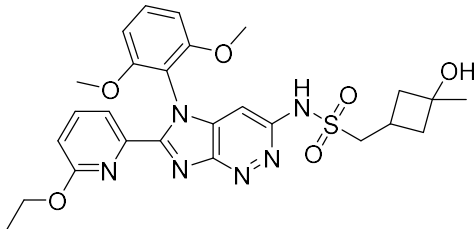
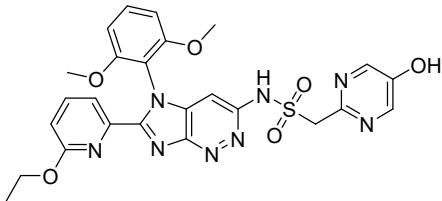
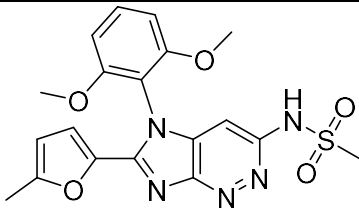
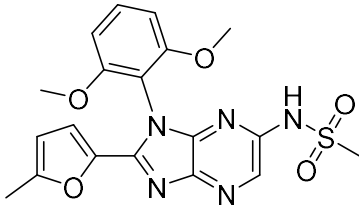
Example #	Structure	IUPAC Name
101		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-5-methylpyridine-2-sulfonamide
102		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-2-sulfonamide
103		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-4-(fluoromethyl)benzenesulfonamide
104		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)pyridine-3-sulfonamide
105		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-fluoropyrimidin-2-yl)methanesulfonamide

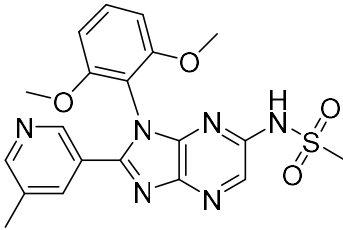
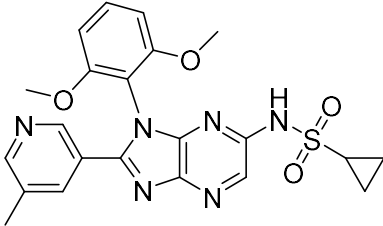
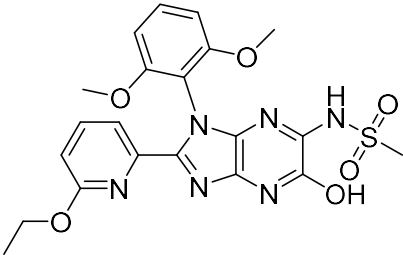
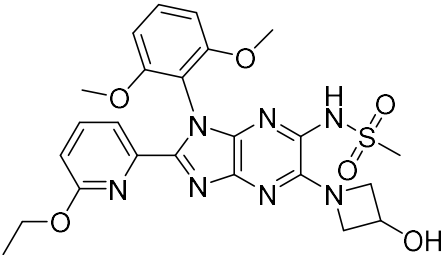
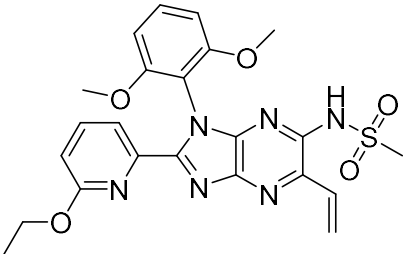
Example #	Structure	IUPAC Name
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107		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(3-fluoro-4-methylphenyl)methanesulfonamide
108		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(4-fluorophenyl)methanesulfonamide
109		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(pyrimidin-2-yl)methanesulfonamide
110		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)but-2-yn-1-sulfonamide

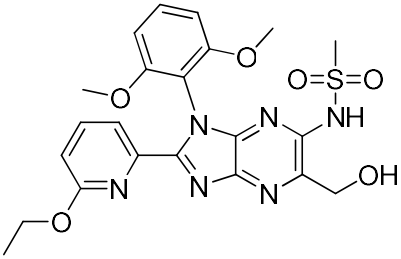
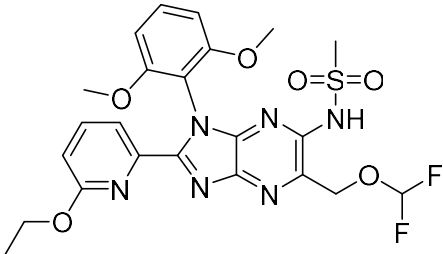
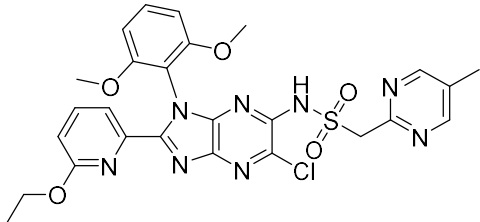
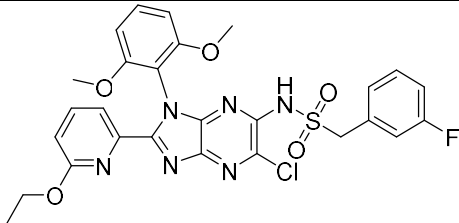
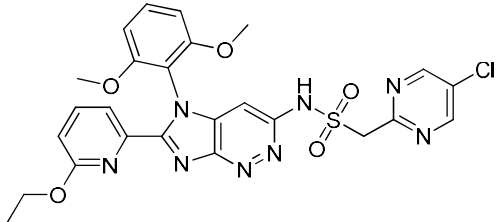
Example #	Structure	IUPAC Name
111		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)tetrahydro-2H-pyran-4-sulfonamide
112		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-N'-methyl-N'-cyclopropylsulfamide
113		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(1-hydroxycyclopropyl)methanesulfonamide (ANPA-0003489)
114		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-methylpyridin-2-yl)methanesulfonamide
115		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-((1R, 3R)-3-hydroxy-3-methylcyclobutyl)methanesulfonamide

Example #	Structure	IUPAC Name
116		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-4-hydroxypiperidine-1-sulfonamide
117		N-(5-Chloro-1-(3,5-dimethoxypyridin-4-yl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
118		N-(5-Chloro-1-(3,5-dimethoxypyridin-4-yl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)cyclopropanesulfonamide
119		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)cyclopropanesulfonamide
120		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-5-fluoropyridine-2-sulfonamide

Example #	Structure	IUPAC Name
121		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)morpholine-4-sulfonamide
122		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-1-(4-fluorophenyl)methanesulfonamide
123		1-(5-Chloropyridin-2-yl)-N-(7-(2,6-dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)methanesulfonamide
124		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-1-(5-methylpyridin-2-yl)methanesulfonamide
125		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-1-(5-fluoropyridin-2-yl)methanesulfonamide
126		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-1-(5-methylpyrimidin-2-yl)methanesulfonamide

Example #	Structure	IUPAC Name
127		N-(5-(2,6-Dimethoxyphenyl)-6-(6-ethoxypyridin-2-yl)-5H-imidazo[4,5-c]pyridazin-3-yl)-1-(pyrimidin-2-yl)methanesulfonamide
128		N-(5-(2,6-Dimethoxyphenyl)-6-(6-ethoxypyridin-2-yl)-5H-imidazo[4,5-c]pyridazin-3-yl)-1-(3-hydroxy-3-methylcyclobutyl)methanesulfonamide
129		N-(7-(2,6-Dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)-1-(5-hydroxypyrimidin-2-yl)methanesulfonamide
130		N-(7-(2,6-Dimethoxyphenyl)-8-(5-methylfuran-2-yl)-7H-imidazo[4,5-c]pyridazinyl)methanesulfonamide
131		N-(1-(2,6-dimethoxyphenyl)-2-(5-methylfuran-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide

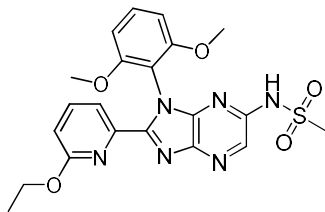
Example #	Structure	IUPAC Name
132		N-(1-(2,6-dimethoxyphenyl)-2-(5-methylpyridin-3-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
133		N-(1-(2,6-dimethoxyphenyl)-2-(5-methylpyridin-3-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)cyclopropanesulfonamide
135		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-hydroxy-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
136		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-(3-hydroxyazetidin-1-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
137		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-vinyl-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide

Example #	Structure	IUPAC Name
140		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-(hydroxymethyl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
141		N-(5-((Difluoromethoxy)methyl)-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
142		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(5-methylpyrimidin-2-yl)methanesulfonamide
143		N-(5-Chloro-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)-1-(3-fluorophenyl)methanesulfonamide
144		1-(5-chloropyrimidin-2-yl)-N-(7-(2,6-dimethoxyphenyl)-8-(6-ethoxypyridin-2-yl)-7H-imidazo[4,5-c]pyridazinyl)methanesulfonamide

Example #	Structure	IUPAC Name
145		N-(5-Amino-1-(2,6-dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide
146		N-(1-(2,6-Dimethoxyphenyl)-2-(6-ethoxypyridin-2-yl)-5-fluoro-1H-imidazo[4,5-b]pyrazin-6-yl)methanesulfonamide

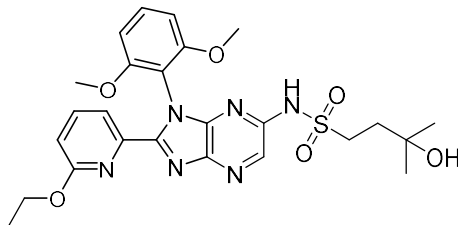
or a pharmaceutically acceptable salt thereof.

34. The compound of claim 1, wherein the compound is:



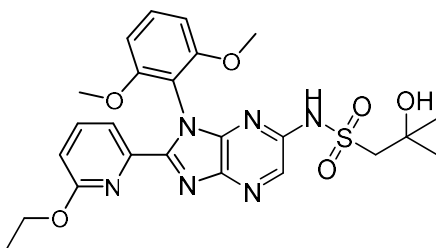
or a pharmaceutically acceptable salt thereof.

35. The compound of claim 1, wherein the compound is:



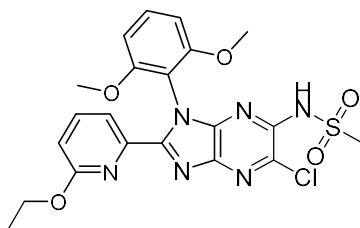
or a pharmaceutically acceptable salt thereof.

36. The compound of claim 1, wherein the compound is



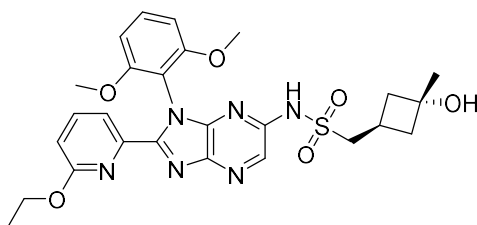
or a pharmaceutically acceptable salt thereof.

37. The compound of claim 1, wherein the compound is:



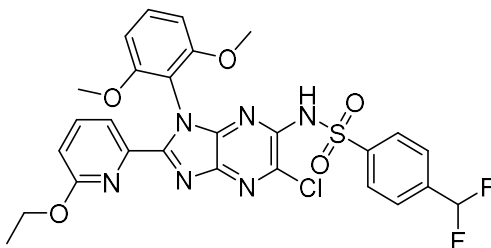
or a pharmaceutically acceptable salt thereof.

38. The compound of claim 1, wherein the compound is:



or a pharmaceutically acceptable salt thereof.

39. The compound of claim 1, wherein the compound is:



or a pharmaceutically acceptable salt thereof.

40. A pharmaceutical composition comprising a compound or salt as claimed in any one of claims 1-39 and one or more pharmaceutically acceptable excipients.

41. A compound as claimed in any one of claims 1-39 for use in a method for treating a disease, disorder, or condition, in which repressed or impaired APJ receptor signaling, or downregulation of endogenous apelin contributes to the pathology and/or symptoms and/or progression of the disease, disorder, or condition, the method comprising administering to the subject in need thereof said compound,

wherein the disease, disorder, or condition is pulmonary arterial hypertension (“PAH”), optionally wherein the PAH is idiopathic, or optionally wherein the PAH is heritable PAH, toxin or drug-induced PAH; or a PAH associated with one or more of the following: congenital heart disease, connective tissue disorders (e.g., scleroderma, systemic lupus erythematosus, systemic sclerosis, Hashimoto's thyroiditis, Sjogren's Syndrome, or the antiphospholipid antibody syndrome), portal hypertension, BMPR2 mutations, Schistosomiasis, and HIV infection, or wherein the disease, disorder, or condition is fibrosis, or wherein the disease, disorder, or condition is idiopathic pulmonary fibrosis (IPF), or wherein the disease, disorder, or condition is a connective tissue disorder.