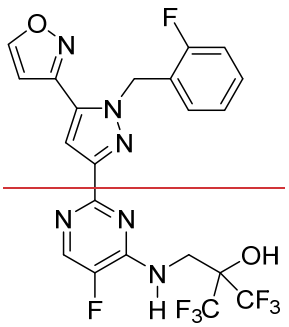
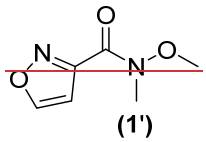
[0007g] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula IA:



Formula IA ;

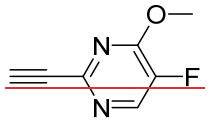
comprising the step of:

i) coupling an amide of formula **(1')**:



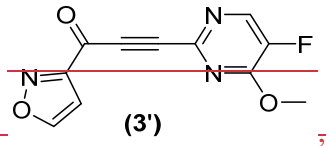
**(1')**

with a pyrimidine compound of formula **(2)**:



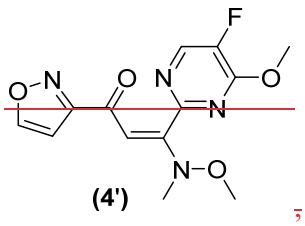
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



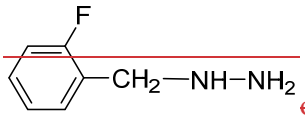
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O* dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

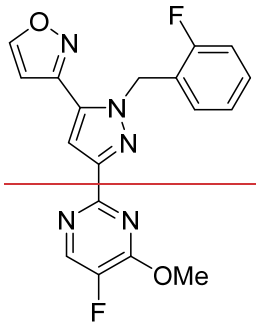


**(4')**

iii) condensing the compound of formula **(4')** with a hydrazine of formula

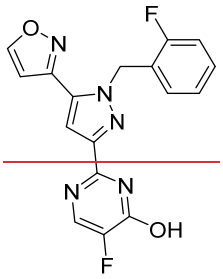


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



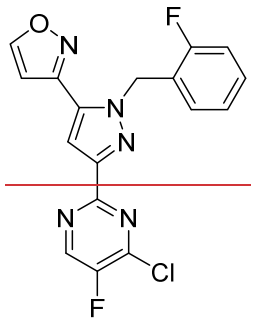
Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



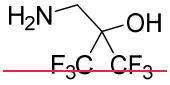
**(9')**

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI ,

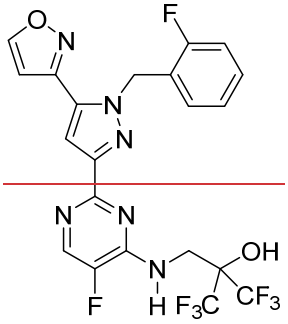
vi) reacting an amine of formula **(17)**:



(**17**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IA.

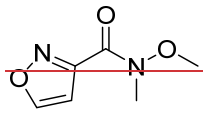
[0007h] In another aspect of the present disclosure, there is provided a process of preparing a compound of Formula IA:



Formula IA ,

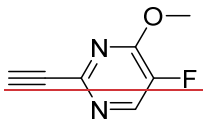
comprising the step of:

i) coupling an amide of formula **(1')**:



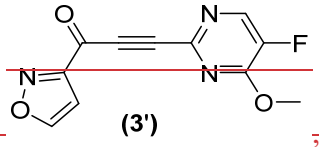
**(1')**

with a pyrimidine compound of formula **(2)**:



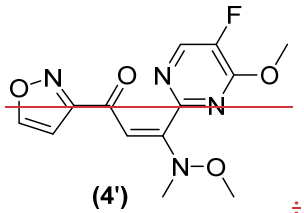
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



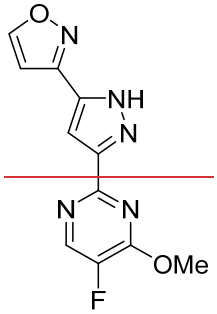
**(3')** , and

ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



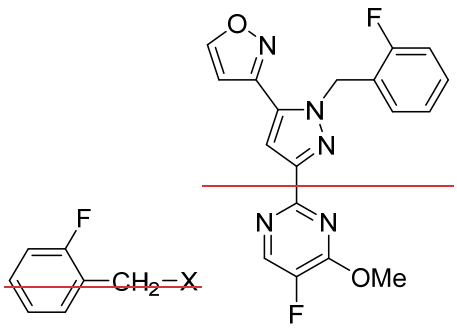
**(4')** ;

iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):



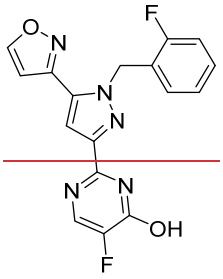
**(24')** ;

iiib) alkylating intermediate of formula (24') with an alkylating agent of formula (23A) to provide the compound of Formula V:



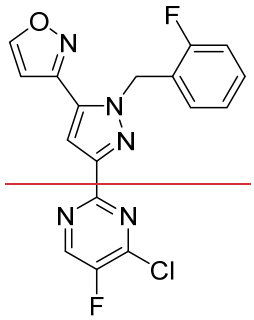

(23A) Formula V ;

iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):



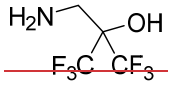

(9') ;

v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride o form a compound of Formula VI:




Formula VI , and

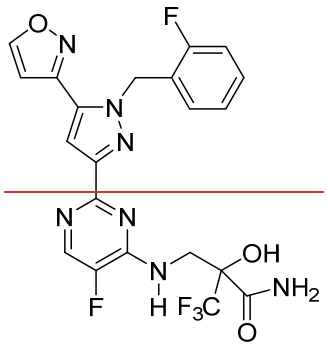
vi) reacting an amine of formula **(17)**:



(**17**)

with the compound of Formula VIA, optionally in the presence of a base, to yield the compound of Formula IA, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

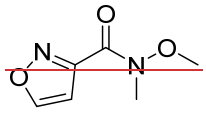
[0007i] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula IB:



Formula IB ;

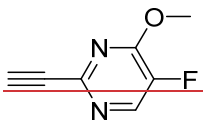
comprising the step of:

i) coupling an amide for formula **(1')**:



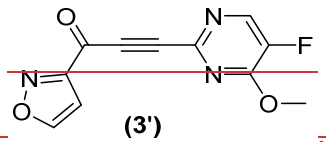
(**1'**)

with a pyrimidine compound of formula **(2)**:



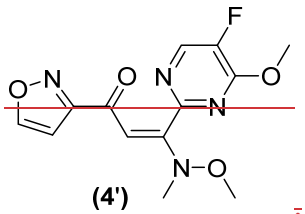
(**2**) ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



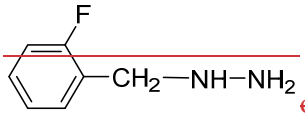

**(3')** ;

ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

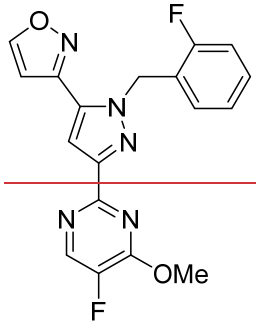



**(4')** ;

iii) condensing the compound of formula **(4')** with a hydrazine of formula

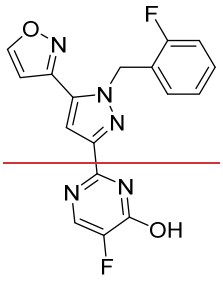



or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:




Formula V ;

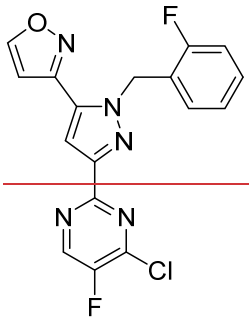
iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):



(9')

;

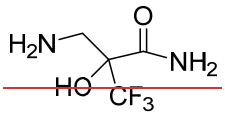
v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:



Formula VI

, and

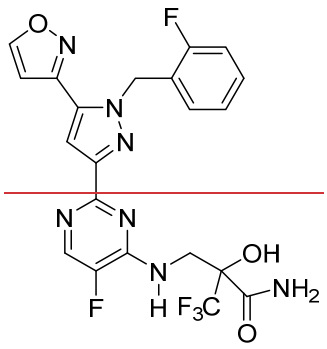
vi) reacting an amine of formula (13):



(13)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IB.

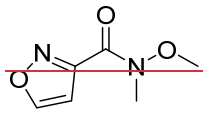
[0007j] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula IB:



Formula IB ;

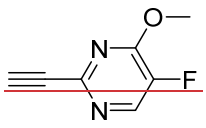
comprising the step of:

i) coupling an amide of formula **(1')**:



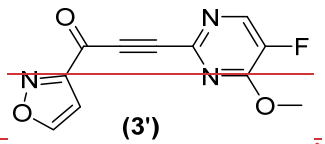
**(1')**

with a pyrimidine compound of formula **(2)**:



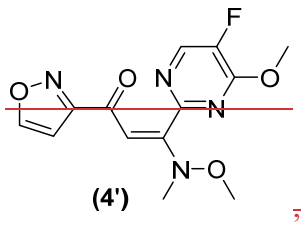
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



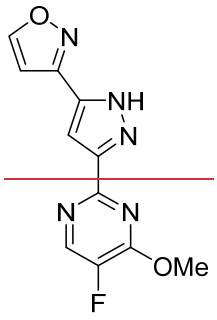
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



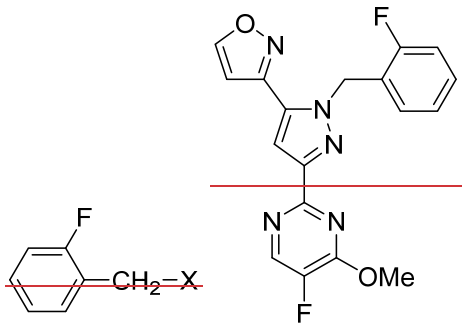
**(4')**

iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula **(24')**:



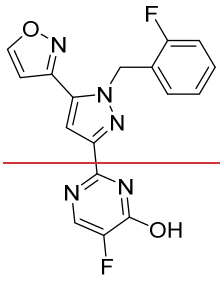
**(24')**

iiib) alkylating intermediate of formula **(24')** with an alkylating agent of formula **(23A)** to provide the compound of Formula V:



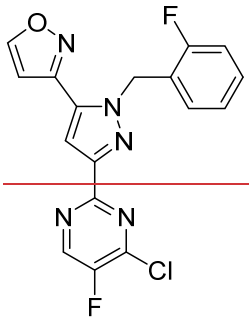
**(23A)** Formula V

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



**(9')**

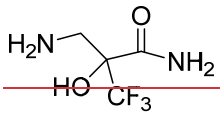
~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI

~~, and~~

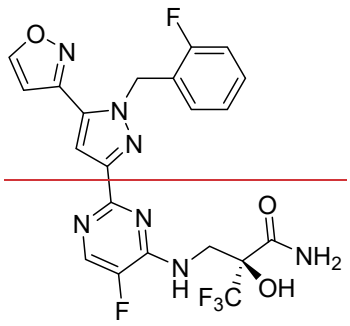
~~vi) reacting an amine of formula (13):~~



**(13)**

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IB, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).~~

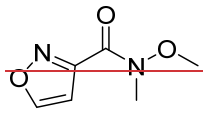
[0007k] In another aspect of the present disclosure, there is provided a process of preparing a compound of Formula IC:



Formla IC ;

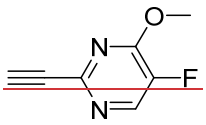
comprising the steps of:

i) coupling an amide for formula **(1')**:



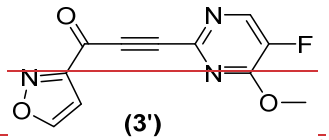
**(1')**

with a pyrimidine compound of formula **(2)**:



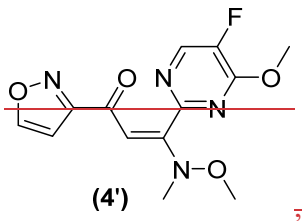
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



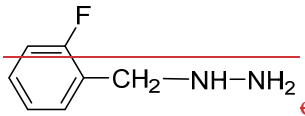
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O* dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

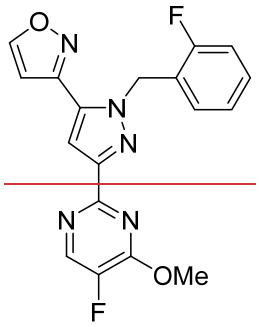


**(4')**

iii) condensing the compound of formula **(4')** with a hydrazine of formula

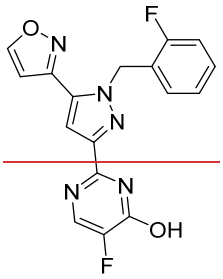


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



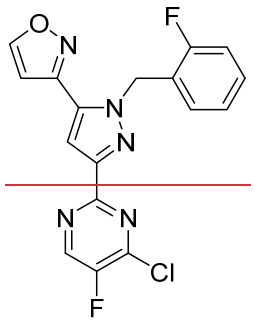
Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



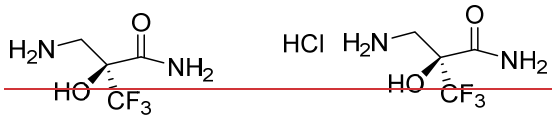
**(9')**

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

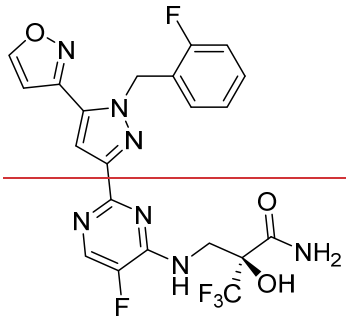
vi) reacting an amine of formula **(19A)** or its HCl salt of formula **(19)**:



**(19A)** **(19)**

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC.

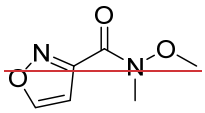
[0007l] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula IC:



Formula IC ;

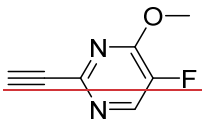
comprising the steps of:

i) coupling an amide of formula **(1')**:



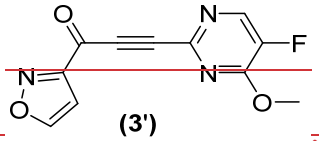
**(1')**

with a pyrimidine compound of formula **(2)**:



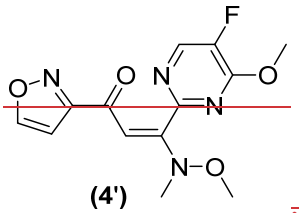
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



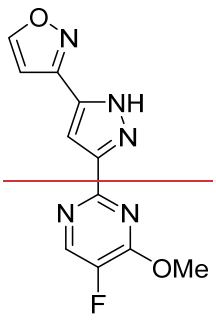
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



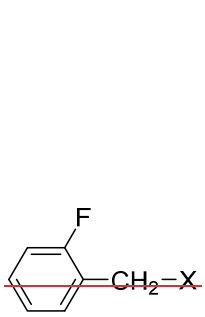
**(4')** ;

~~iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula **(24')**:~~

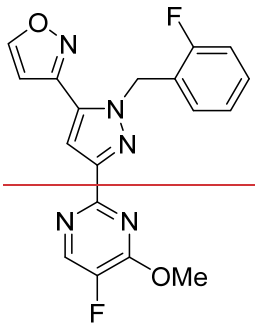


**(24')**

~~iiib) alkylating intermediate of formula **(24')** with an alkylating agent of formula **(23A)** to provide the compound of Formula V:~~

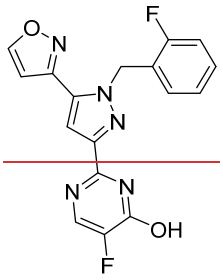


**(23A)**



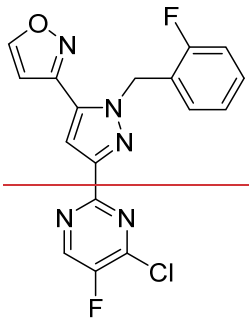
Formula V

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:~~



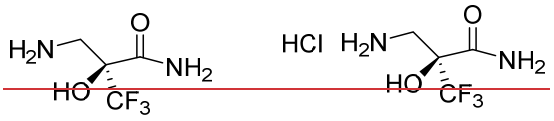
**(9')**

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

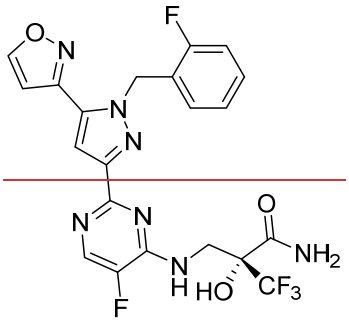
vi) reacting an amine of formula **(19A)** or its HCl salt of formula **(19)**:



**(19A)** **(19)**

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

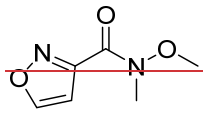
[0007m] In another aspect of the present disclosure, there is provided a process of preparing a compound of Formula ID:



Formula ID ,

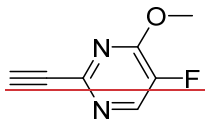
comprises the steps of:

i) coupling an amide for formula **(1')**:



**(1')**

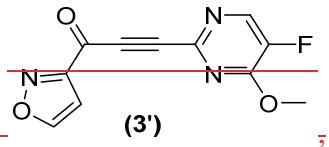
with a pyrimidine compound of formula **(2)**:



**(2)**

;

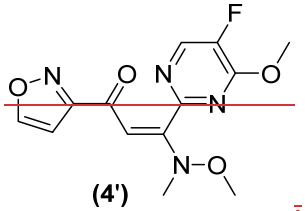
in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



**(3')**

;

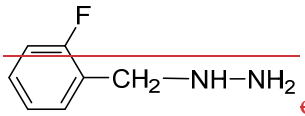
ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:



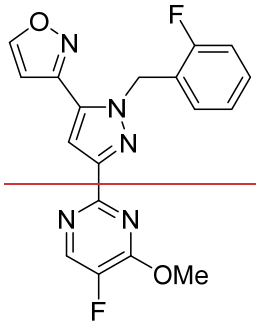
**(4')**

;

iii) condensing the compound of formula (4') with a hydrazine of formula

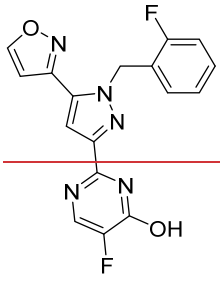


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



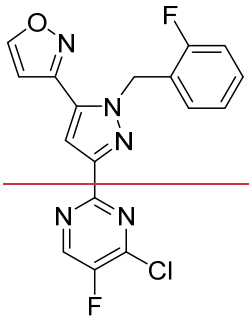
Formula V ;

iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):



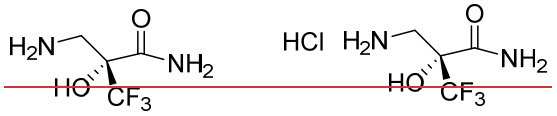
(9') ;

v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

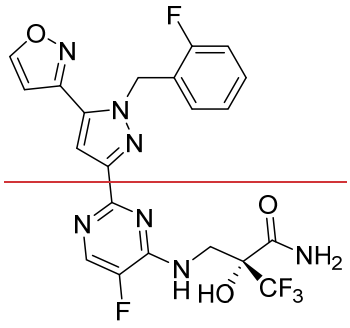
vi) reacting an amine of formula **(15A)** or its HCl salt of formula **(15)**:



**(15A)** **(15)**

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID.

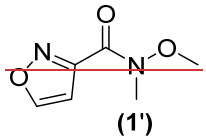
[0007n] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula ID:



Formula ID

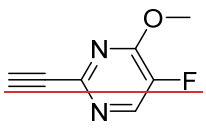
comprising the steps of:

i) coupling an amide of formula **(1')**:



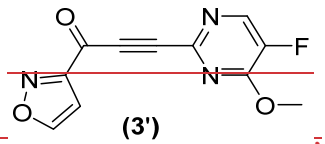
**(1')**

with a pyrimidine compound of formula **(2)**:



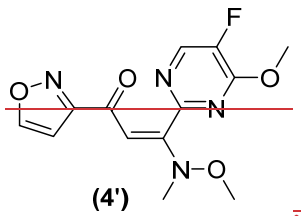
**(2)**

~~in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:~~



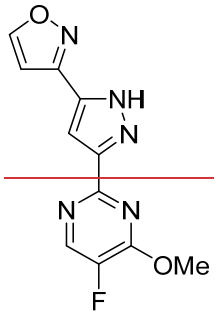
**(3')**

~~ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:~~



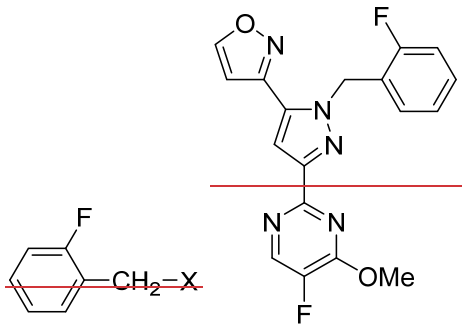
**(4')**

~~iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):~~



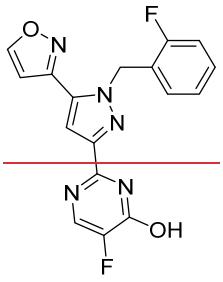
**(24')**

~~iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**) to provide the compound of Formula V:~~



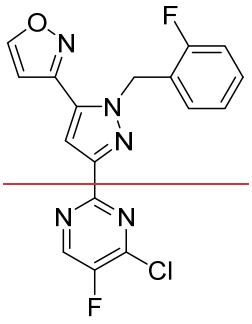
**(23A)** Formula V

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



**(9')**

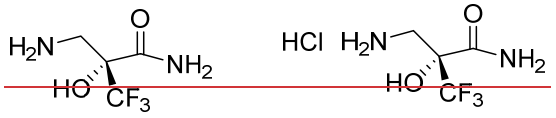
~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI

~~, and~~

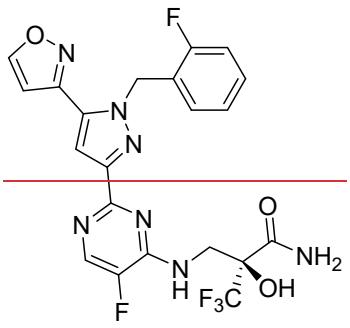
~~vi) reacting an amine of formula (15A) or its HCl salt of formula (15):~~



**(15A)** **(15)**

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (*e.g.*, mesylate, tosylate or triflate).~~

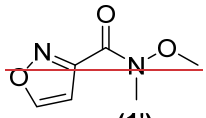
[0007o] In another aspect of the present disclosure, there is provided a process of preparing a compound of Formula IC:



Formula IC ,

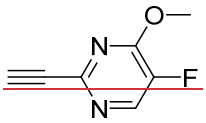
comprises the steps of:

i) coupling an amide for formula **(1')**:



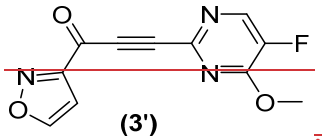
**(1')**

with a pyrimidine compound of formula **(2)**:



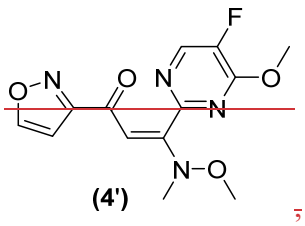
**(2)** ,

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



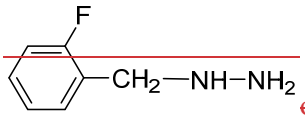
**(3')** ,

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

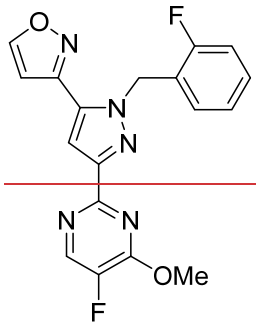


**(4')**

iii) condensing the compound of formula **(4')** with a hydrazine of formula

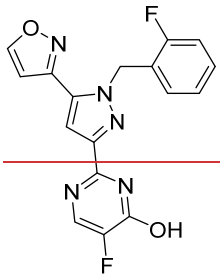


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



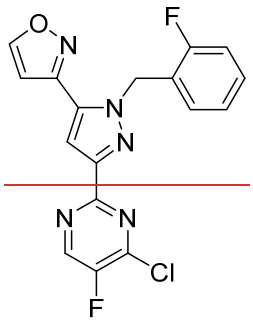
Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



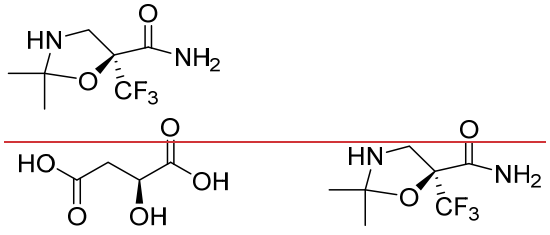
**(9')**

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI ; and

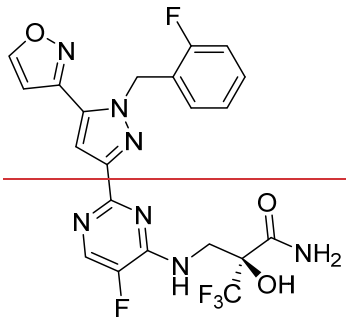
vi) reacting an (*L*)-malic acid salt of an amine **(21)** represented by formula **(18)**:



(**18**) (**21**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC.

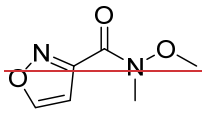
[0007p] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula IC:



Formula IC ;

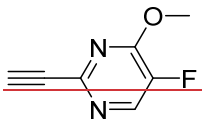
comprising the steps of:

i) coupling an amide of formula **(1')**:



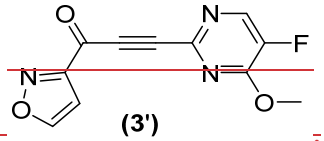
**(1')**

with a pyrimidine compound of formula **(2)**:



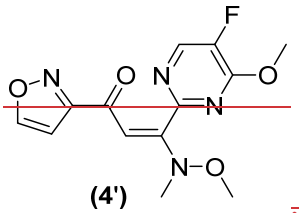
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



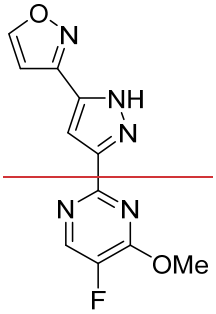
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



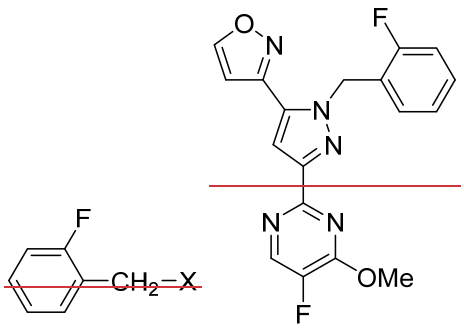
**(4')** ;

iiia) condensing the compound of formula **(4')** with a hydrazine (*e.g.*, hydrazine hydrate) to form a compound of formula **(24')**:



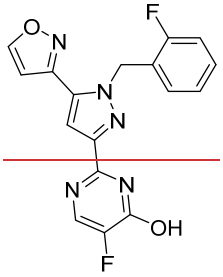
**(24')** ;

~~iiib) alkylating intermediate of formula (24') with an alkylating agent of formula (23A) to provide the compound of Formula V:~~



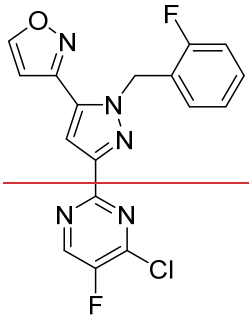
~~(23A)~~ Formula V ~~,~~

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



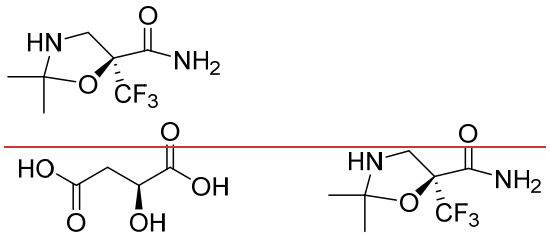
~~(9')~~ ~~,~~

~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI ~~, and~~

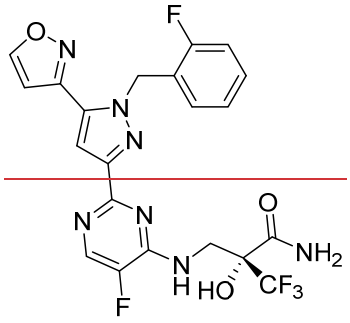
vi) reacting an (*L*) malic acid salt of an amine **(21)** represented by formula **(18)**:



**(18)** **(21)**

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

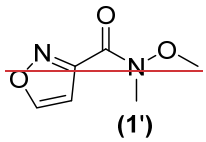
[0007q] In another aspect of the present disclosure, there is provided a process of preparing a compound of Formula ID:



Formula ID

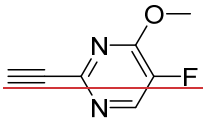
comprising the steps of:

i) coupling an amide of formula **(1')**:



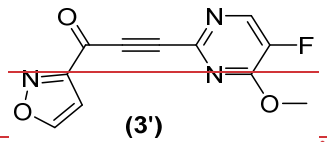
**(1')**

with a pyrimidine compound of formula **(2)**:



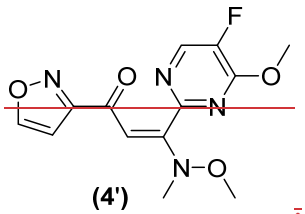
**(2)** ;

~~in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**~~



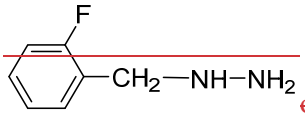

**(3')** ;

~~ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:~~

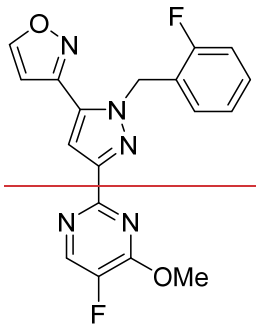



**(4')** ;

~~iii) condensing the compound of formula **(4')** with a hydrazine of formula~~

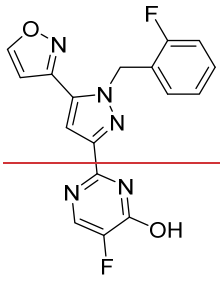



~~or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:~~



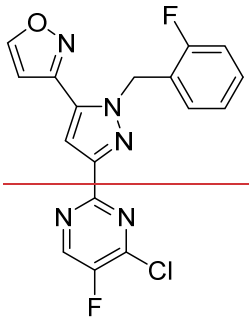

Formula V ;

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



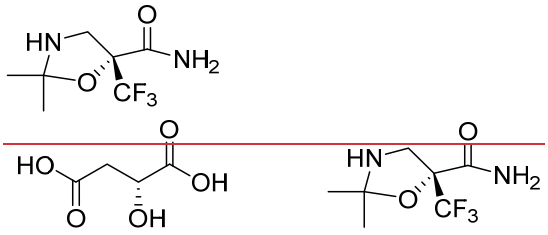
**(9')** ;

~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI ~~, and~~

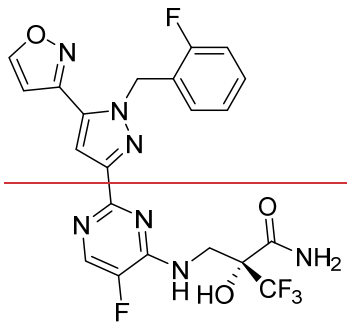
~~vi) reacting a (*D*) malic acid salt of an amine (**20**) represented by formula (**14**):~~



**(14)** **(20)**

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID.~~

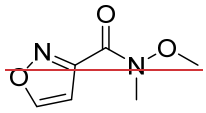
[0007r] In a further aspect of the present disclosure, there is provided a process of preparing a compound of Formula ID:



Formula ID ;

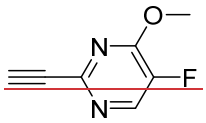
comprising the steps of:

i) coupling an amide of formula **(1')**:



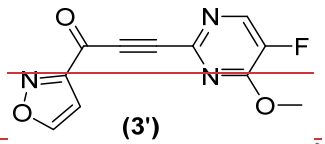
**(1')**

with a pyrimidine compound of formula **(2)**:



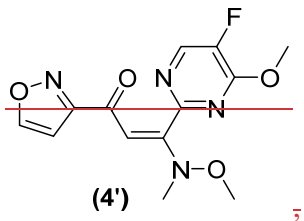
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



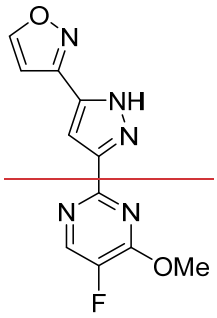
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



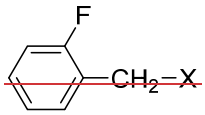
**(4')**

iiia) condensing the compound of formula **(4')** with a hydrazine (*e.g.*, hydrazine hydrate) to form a compound of formula **(24')**:



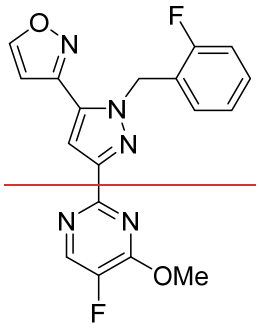
**(24')**

iiib) alkylating intermediate of formula **(24')** with an alkylating agent of formula **(23A)**



**(23A)**

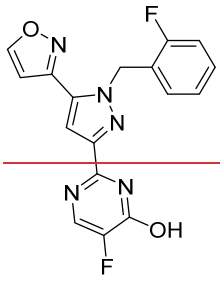
to provide the compound of Formula V:



Formula V

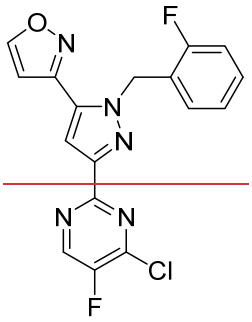
2an

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



**(9')**

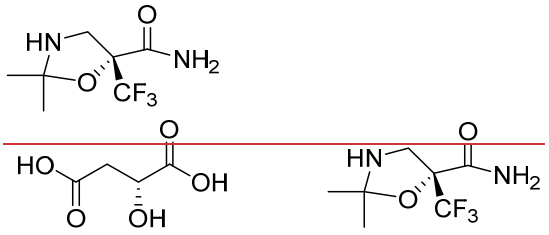
~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI

~~, and~~

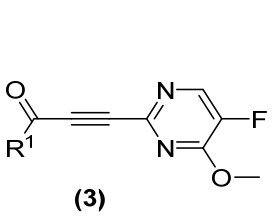
~~vi) reacting a (*D*)-malic acid salt of an amine (**20**) represented by formula (**14**):~~



**(14)** **(20)**

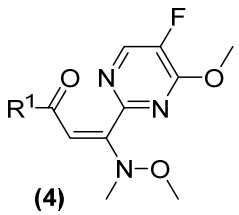
~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID, wherein X is a leaving group selected from –Br, -I, -Cl, -F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).~~

[0007gs] In another aspect of the present disclosure, there is provided a compound of formula **(3)** or **(4)**:



**(3)**

; or

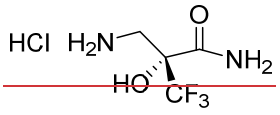


**(4)**

,

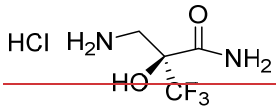
wherein $R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O.

~~[0007t] In a further aspect of the present disclosure, there is provided ap compound represented by any one of the following formulae:~~



**(15)**

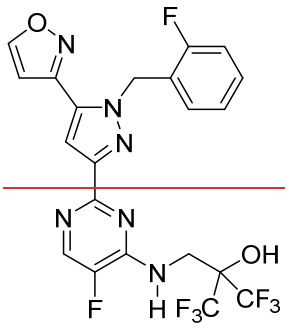
~~; and~~



**(19)**

~~.~~

~~[0007u] In another aspect of the present disclosure, there is provided Crystalline Form A of the compound of Formula IA:~~



Formula IA

~~,~~

~~having at least one, two, three, four, five, six, seven or eight major peaks in an x-ray powder diffraction (XRPD) pattern selected from selected from 4.2, 9.1, 9.8, 17.2, 17.7, 18.2, 27.5, and 36.0 degree 2θ angles; optionally the crystalline Form A has (i) the XRPD pattern of FIG. 1; (ii)~~

~~an endothermic onset at a temperature between 160 °C and 165 °C in a differential scanning calorimetry (DSC) profile; and/or (iii) an endothermic onset at 163.1 °C; and optionallyat least 70%, 80%, 90%, 95%, 98%, 99%, 99.5%, or 99.9% of the compound is the crystalline Form A of the compound.~~

[0008] In one example, compounds of Formula I and their pharmaceutically acceptable salts are sGC stimulators useful for treating diseases or disorders that benefit from sGC stimulation or from an increase in the concentration of nitric oxide (NO) and/or cyclic guanosine monophosphate (cGMP). In another example, compounds of Formula I are useful intermediates in the preparation of said sGC stimulators.

[0009] For a compound of Formula I, the following definitions apply:

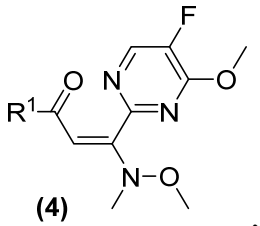
$R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O;

$R^2$ is phenyl or a 6-membered heteroaryl, optionally substituted with up to three instances of $R^5$;

CLAIMS

What is claimed is:

1. A process for preparing a compound of formula (**4**):

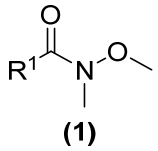


**(4)**

,

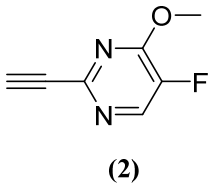
comprising the steps of:

i) coupling an amide of formula **(1)**:



**(1)**

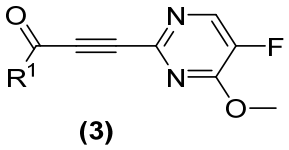
with a pyrimidine compound of formula **(2):**



**(2)**

,

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3)**



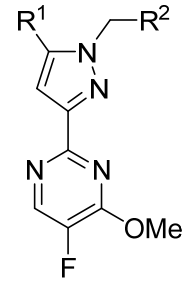
**(3)**

, and

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4)**, wherein:

$R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O.

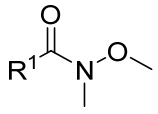
2. A process for preparing a compound of Formula II:




Formula II ,

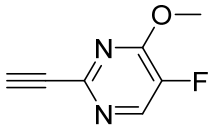
comprising the steps of:

i) coupling an amide of formula **(1)**:



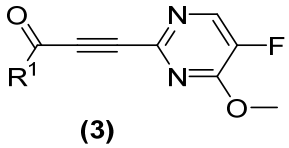

**(1)**

with a pyrimidine compound of formula **(2)**:



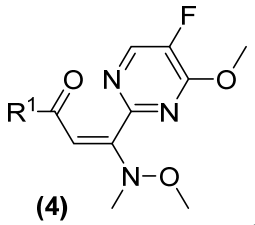

**(2)** ,

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3)**:




**(3)** ,

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4)**:



**(4)**

, and

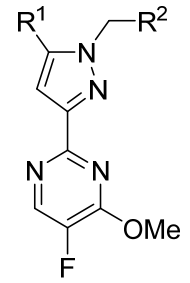
iii) condensing the compound of formula **(4)** with a hydrazine of formula $R^2$-$CH_2$-$NH$-$NH_2$ or a salt thereof, optionally in the presence of a base, to form the compound of Formula II, wherein:

$R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O; and

$R^2$ is phenyl or a 6-membered heteroaryl, optionally substituted with up to three instances of $R^5$; wherein said 6-membered heteroaryl ring contains up to 2 nitrogen ring atoms; and

each $R^5$ is independently methyl, methoxy or halogen.

3. A process of preparing a compound of Formula II:

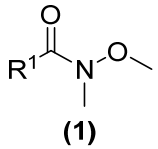


Formula II

,

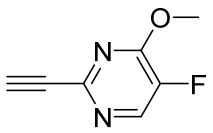
comprising the steps of:

i) coupling an amide of formula **(1)**:



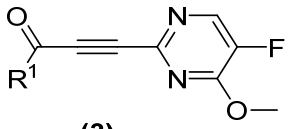
**(1)**

with a pyrimidine compound of formula **(2):**



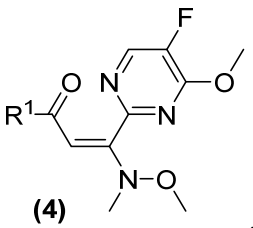
**(2)** ,

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3)**:



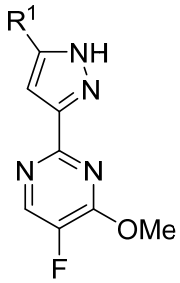
**(3)** ,

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4)**:



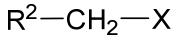
**(4)** ,

iiia) condensing the compound of formula **(4)** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24**):



**(24)** ; and

iiib) alkylating intermediate of formula (**24**) with an alkylating agent of formula (**22**) to provide the compound of Formula II



**(22)** ;

wherein:

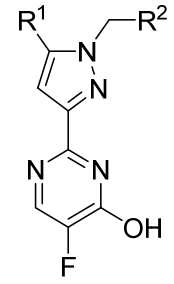
$R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O; and

$R^2$ is phenyl or a 6-membered heteroaryl, optionally substituted with up to three instances of $R^5$; wherein said 6-membered heteroaryl ring contains up to 2 nitrogen ring atoms;

each $R^5$ is independently methyl, methoxy or halogen;

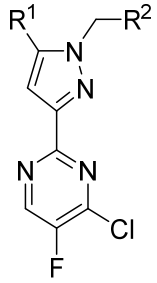
X is a leaving group selected from –Br, -I, -Cl, -F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

4. The process of claim 2 or 3, further comprising step iv) de-methylating the compound of Formula II to form an alcohol Compound (**9**):



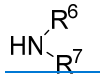

Compound (**9**).

5. The process of claim 4, further comprising step v) chlorinating the alcohol compound of formula **(9)** with phosphoryl chloride, to form the compound of Formula III:



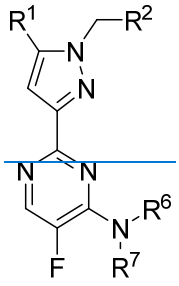

Formula III .

~~6. The process of claim 5, further comprising step vi) reacting with an amine compound of formula **(10)**:~~



(**10**)

~~with the compound of Formula III, optionally in the presence of a base, to yield the compound of Formula IV:~~



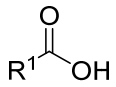
Formula IV ~~, wherein:~~

~~$R^6$ is hydrogen or $C_{1-4}$ alkyl substituted with 0 to 3 instances of $R^8$;~~

~~$R^7$ is hydrogen or $C_{1-4}$ alkyl substituted with 0 to 3 instances of $R^8$; and~~

~~each $R^8$ is independently –OH, $C_{1-3}$ haloalkyl, halogen or –C(O)$NH_2$.~~

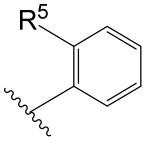
6. The process of any one of claims 1-5, wherein the compound of formula **(1)** is prepared by reacting a carboxylic acid of formula **(8)**



(**8**)

with oxalyl chloride or an equivalent amide coupling reagent, followed by *N*,*O*-dimethylhydroxylamine or a salt thereof, in the presence of a base to form the amide of formula **(1)**.

7. The process of any one of claims 1-6, wherein $R^1$ is a 5-membered heteroaryl ring or $R^1$ is an unsubstituted 5-membered heteroaryl ring containing up to 2 ring heteroatoms selected from the group consisting of N and O.

8. The process of any one of claims 2-7, wherein: (i) $R^2$ is phenyl optionally substituted with up to two instances of $R^5$; (ii) $R^2$ is phenyl optionally substituted with one instance of $R^5$; (iii) $R^2$ is represented by formula 

; or (iv) $R^2$ is a 6-membered heteroaryl, optionally substituted with up to two instances of $R^5$; and wherein said 6-membered heteroaryl ring contains up to 2 nitrogen ring atoms; optionally wherein (i) each $R^5$ is independently methyl or halogen; (ii) each $R^5$ is independently halogen; or (iii) each $R^5$ is fluoro.

~~9. The process of any one of claims 6-8, wherein (i) $R^6$ is hydrogen or $C_{1-2}$ alkyl substituted with 0 to 3 instances of $R^8$ or $R^6$ is hydrogen; and/or (ii) $R^7$ is hydrogen or $C_{1-2}$ alkyl substituted with 0 to 3 instances of $R^8$ or $R^7$ is $C_{1-2}$ alkyl substituted with 3 instances of $R^8$; optionally each $R^8$ is independently –OH, trifluoromethyl, or –C(O)$NH_2$.~~

~~10. The process of any one of claims 1-6, wherein:~~

~~(i) $R^1$ is an unsubstituted 5-membered heteroaryl ring containing up to 2 ring heteroatoms selected from the group consisting of N and O;~~

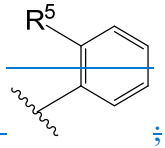
~~$R^2$ is phenyl, optionally substituted with one or two instances of $R^5$;~~

~~each $R^5$ is fluoro;~~

~~$R^6$ is hydrogen;~~

~~$R^7$ is $C_{1-2}$ alkyl substituted with 3 instances of $R^8$ and each $R^8$ is independently –OH, trifluoromethyl, or –C(O)$NH_2$; or~~

~~(ii) $R^1$ is an unsubstituted 5-membered heteroaryl ring containing up to 2 ring heteroatoms selected from the group consisting of N and O;~~

~~$R^2$ is~~ 

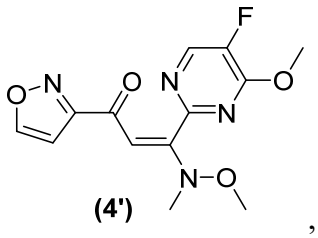
~~;~~

~~each $R^5$ is fluoro;~~

~~$R^6$ is hydrogen;~~

~~$R^7$ is $C_{1-2}$ alkyl substituted with 3 instances of $R^8$ and each $R^8$ is independently –OH, trifluoromethyl, or –C(O)$NH_2$.~~

~~119~~. A process of preparing a compound of formula **(4')**:

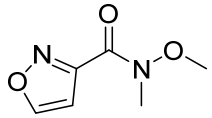


**(4')**

,

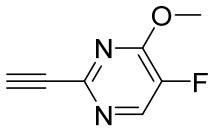
comprising the steps of:

i) coupling an amide of formula **(1')**:



**(1')**

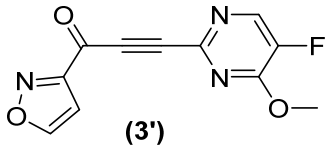
with a pyrimidine compound of formula **(2)**:



**(2)**

,

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:

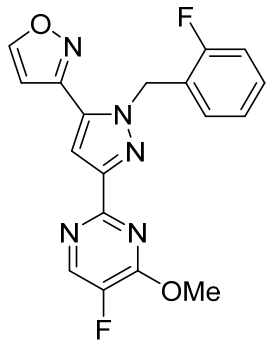


**(3')**

, and

ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**.

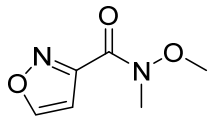
~~12~~10. A process of preparing a compound of Formula V:



Formula V ,

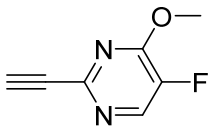
comprising the steps of:

i) coupling an amide of formula **(1')**:



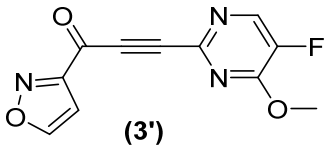
**(1')**

with a pyrimidine compound of formula **(2)**:



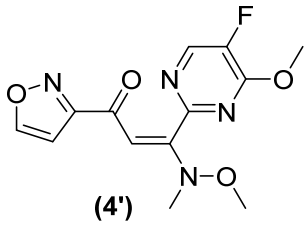
**(2)** ,

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



**(3')** ,

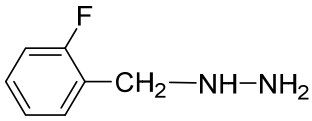
ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:



**(4')**

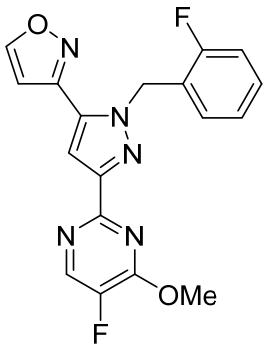
, and

iii) condensing the compound of formula **(4')** with a hydrazine of formula



or a salt thereof, optionally in the presence of a base, to form the compound of Formula V.

~~13~~11. A process of preparing a compound of Formula V:

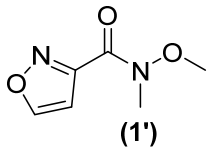


Formula V

,

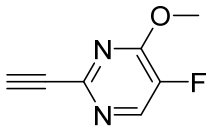
comprising the steps of:

i) coupling an amide of formula **(1')**:



**(1')**

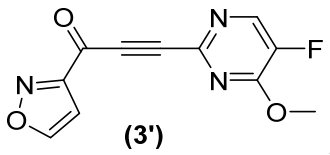
with a pyrimidine compound of formula **(2)**:



**(2)**

,

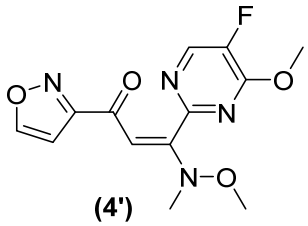
in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



**(3')**

,

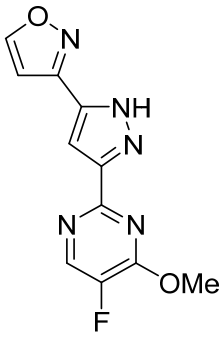
ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



**(4')**

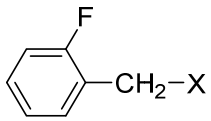
,

iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):



**(24')** ; and

iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**) to provide the compound of Formula V:

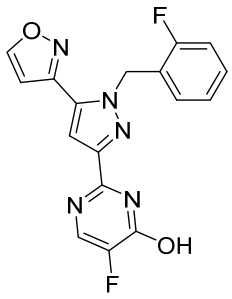


**(23A)**

,

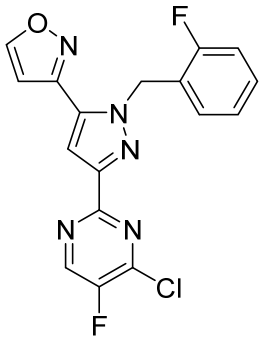
wherein X is a leaving group selected from –Br, -I, -Cl, -F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

~~14~~12. The process of claim ~~12~~ 10 or ~~13~~11, further comprising step iv) de-methylating the compound of Formula V to form an alcohol Compound (**9'**):



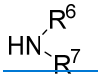
**(9')**

~~15~~13. The process of claim ~~14~~12, further comprising step v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form the compound of Formula VI:



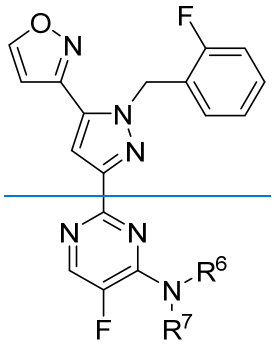
Formula VI

~~16. The process of claim 15, further comprising step vi) reacting an amine compound of formula **(10):**~~



**(10)**

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula VII:~~



Formula VII , wherein:

$R^6$ is hydrogen or $C_{1-4}$ alkyl substituted with 0 to 3 instances of $R^8$;

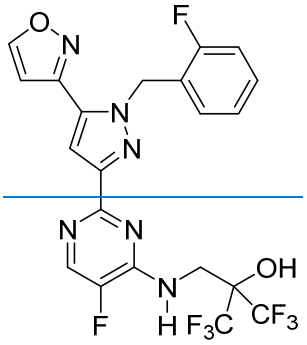
$R^7$ is hydrogen or $C_{1-4}$ alkyl substituted with 0 to 3 instances of $R^8$; and

each $R^8$ is independently –OH, $C_{1-3}$ haloalkyl, halogen or –$C(O)NH_2$.

17. The process of any one of claims 14-16, wherein (i) $R^6$ is hydrogen or $C_{1-2}$ alkyl substituted with 0 to 3 instances of $R^8$ or $R^6$ is hydrogen; and/or (ii) $R^7$ is hydrogen or $C_{1-2}$ alkyl substituted with 0 to 3 instances of $R^8$ or (ii) $R^7$ is $C_{1-2}$ alkyl substituted with 3 instances of $R^8$, optionally wherein each $R^8$ is independently –OH, trifluoromethyl, or –$C(O)NH_2$.

18. The process of any one of claims 14-16, wherein $R^6$ is hydrogen; $R^7$ is $C_{1-2}$ alkyl substituted with 3 instances of $R^8$ and each $R^8$ is independently –OH, trifluoromethyl, or –$C(O)NH_2$.

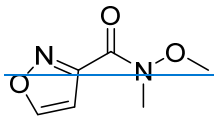
19. A process of preparing a compound of Formula IA:



Formula IA ,

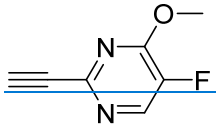
comprising the step of:

i) coupling an amide of formula **(1')**:



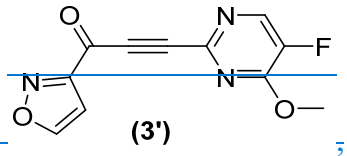
(1')

with a pyrimidine compound of formula **(2)**:



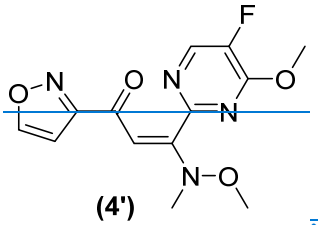
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



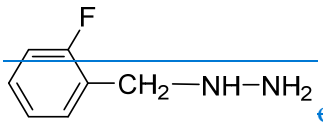
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

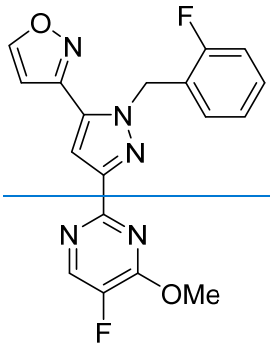


**(4')** ;

iii) condensing the compound of formula **(4')** with a hydrazine of formula

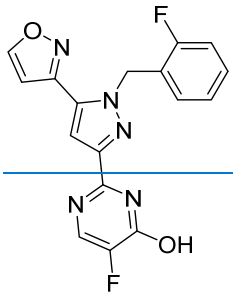


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



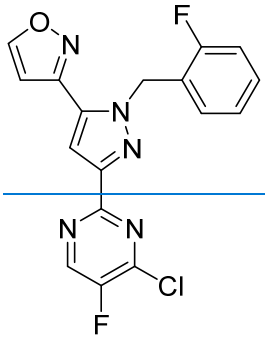
Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9'):**



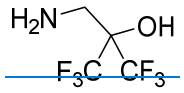
**(9')**

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI

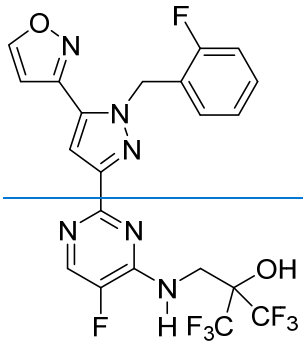
vi) reacting an amine of formula **(17):**



(**17**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IA.

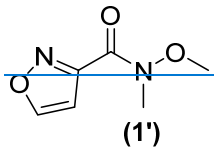
20. A process of preparing a compound of Formula IA:



Formula IA ,

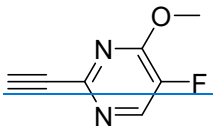
comprising the step of:

i) coupling an amide of formula **(1')**:



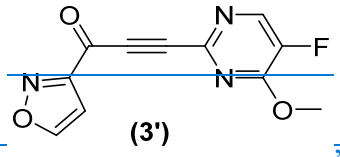
**(1')**

with a pyrimidine compound of formula **(2)**:



**(2)** ,

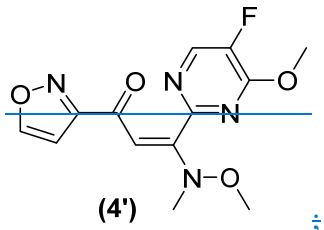
in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



(3')

~~, and~~

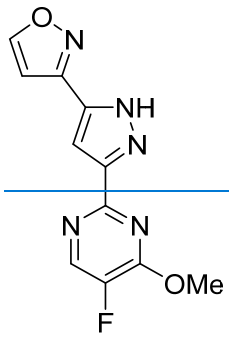
~~ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:~~



(4')

~~;~~

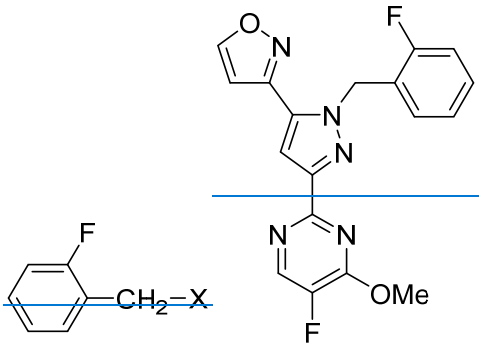
~~iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):~~



(24')

~~;~~

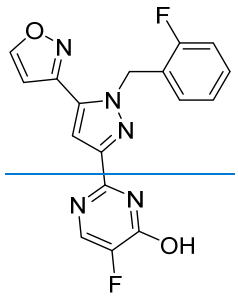
~~iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**) to provide the compound of Formula V:~~



(23A) Formula V

~~;~~

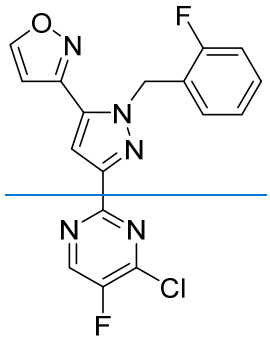
iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):



(9')

;

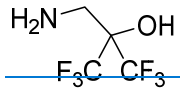
v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride o form a compound of Formula VI:



Formula VI

, and

vi) reacting an amine of formula (17):



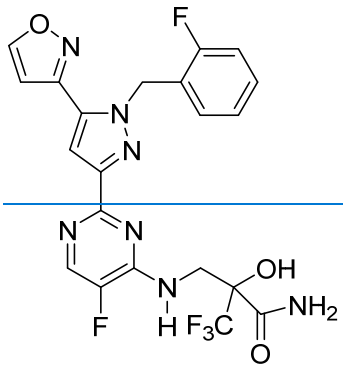
(17)

with the compound of Formula VIA, optionally in the presence of a base, to yield the compound of Formula IA, wherein X is a leaving group selected from -Br, -I, -Cl, -F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

21. The process of claim 19 or 20, wherein the process further comprises re-crystalization of the compound of Formula IA in a mixture of methanol and water; optionally wherein the re-crystallization comprises the steps of: A') dissolving the compound of Formula IA in methanol at a temperature between 30 °C and 65 °C to obtain a methanol solution of the compound of

~~Formula IA; B') filtering the methanol solution of the compound of Formula IA from step A') to form a filtered methanol solution of the compound of Formula IA; C') adding water to the filtered methanol solution of the compound of Formula IA at a temperature between 50 °C and 60 °C to yield a slurry; D') cooling the slurry of step 3) to yield a recrystallized compound of Formula IA; and E') filtering and drying the recrystallized compound of Formula IA.~~

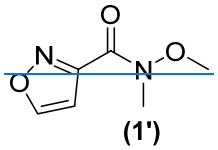
~~22. A process of preparing a compound of Formula IB:~~



Formula IB ;

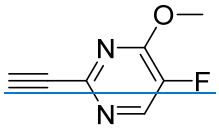
~~comprising the step of:~~

~~i) coupling an amide for formula **(1')**:~~



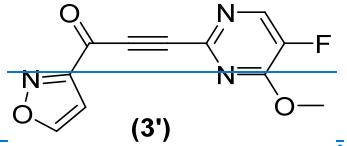
**(1')**

~~with a pyrimidine compound of formula **(2)**:~~



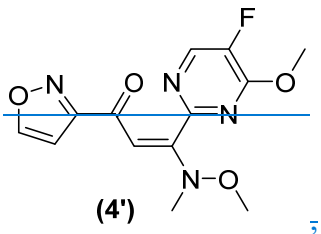
**(2)** ;

~~in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:~~



**(3')** ;

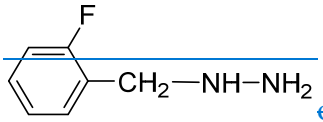
ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:



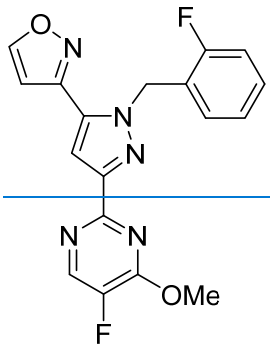
**(4')**

;

iii) condensing the compound of formula **(4')** with a hydrazine of formula



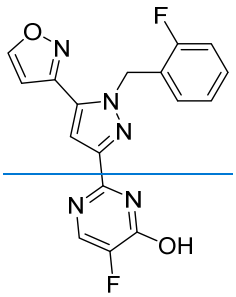
or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



Formula V

;

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:

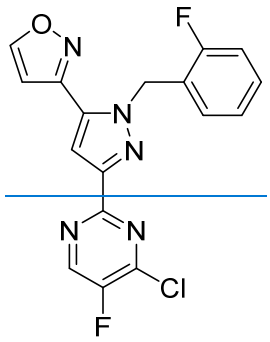


**(9')**

;

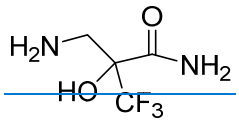
v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a

~~compound of Formula VI:~~



Formula VI ~~, and~~

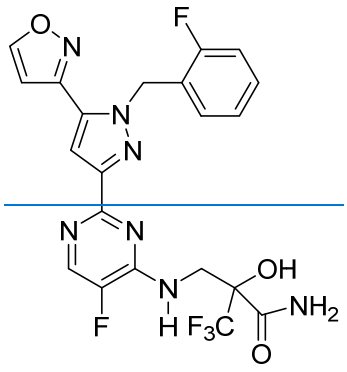
~~vi) reacting an amine of formula **(13)**:~~



(**13**)

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IB.~~

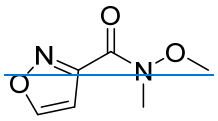
~~23. A process of preparing a compound of Formula IB:~~



Formula IB ;

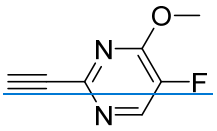
~~comprising the step of:~~

~~i) coupling an amide of formula **(1')**:~~



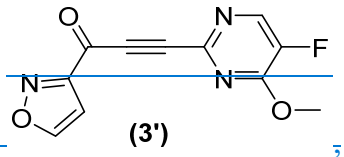
(1')

with a pyrimidine compound of formula **(2)**:



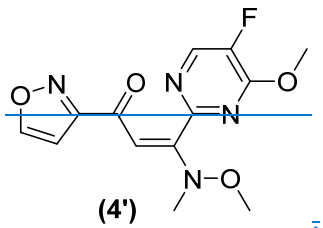
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



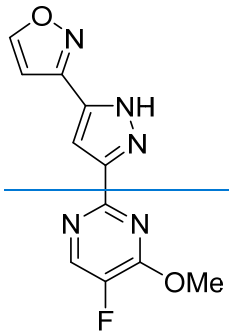
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



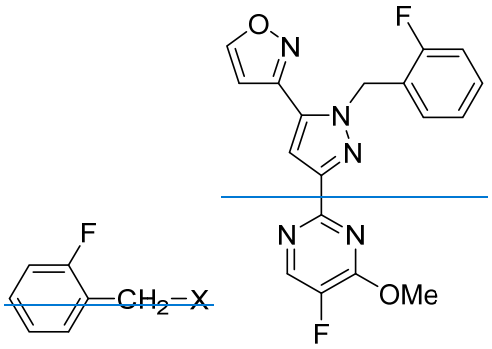
**(4')** ;

iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):



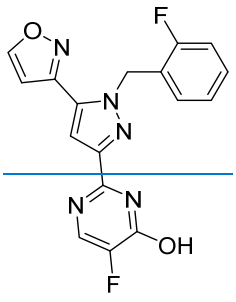
**(24')** ;

~~iiib) alkylating intermediate of formula (24') with an alkylating agent of formula (23A) to provide the compound of Formula V:~~



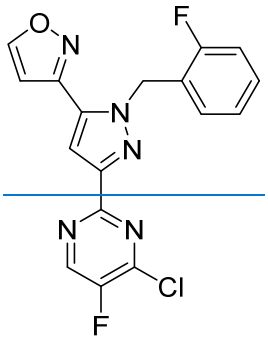
**(23A)** Formula V ;

~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (9'):~~



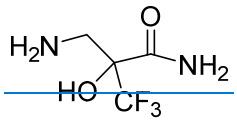
**(9')** ;

~~v) chlorinating the alcohol compound of formula (9') with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI , and

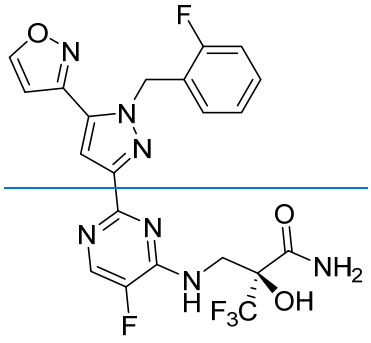
vi) reacting an amine of formula **(13)**:



(**13**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IB, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).

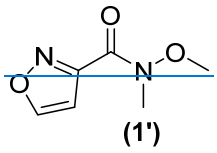
24. A process of preparing a compound of Formula IC:



Formla IC ;

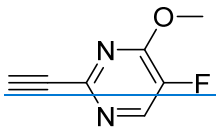
comprising the steps of:

i) coupling an amide for formula **(1')**:



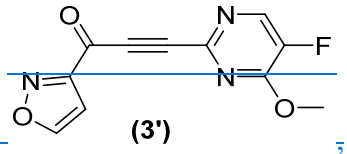
**(1')**

with a pyrimidine compound of formula **(2)**:



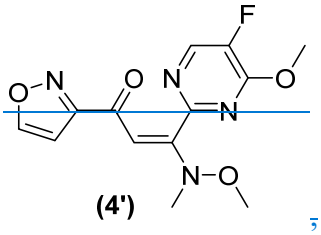
**(2)**

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



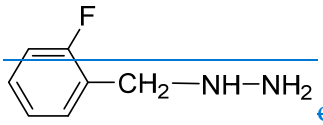
**(3')**

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

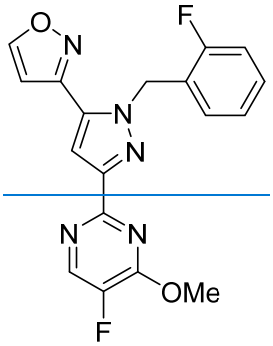


**(4')**

iii) condensing the compound of formula **(4')** with a hydrazine of formula

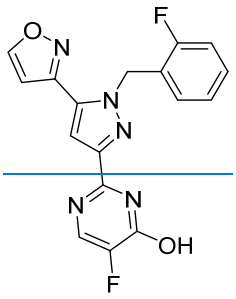


or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



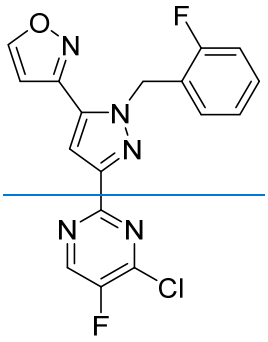
Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9'):**



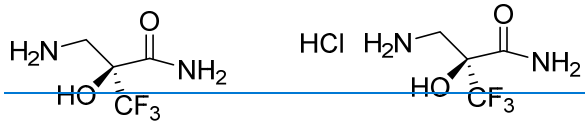
**(9')** ;

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

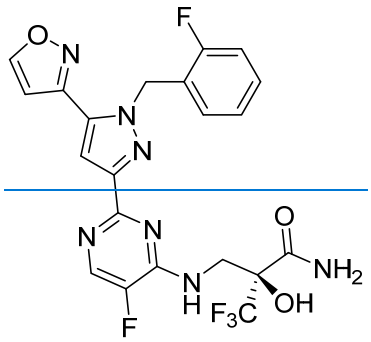
vi) reacting an amine of formula **(19A)** or its HCl salt of formula **(19):**



**(19A)** **(19)**

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC.

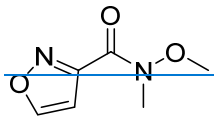
25. A process of preparing a compound of Formula IC:



Formula IC ;

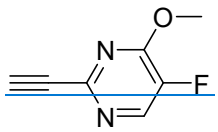
comprising the steps of:

i) coupling an amide of formula **(1')**:



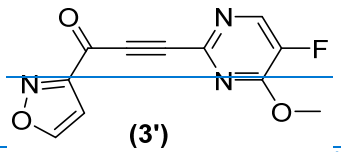
**(1')**

with a pyrimidine compound of formula **(2)**:



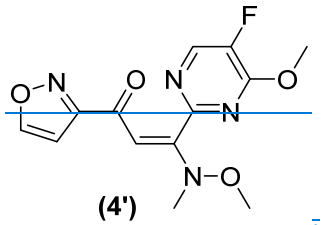
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



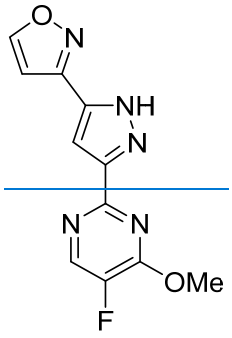
**(3')** ;

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



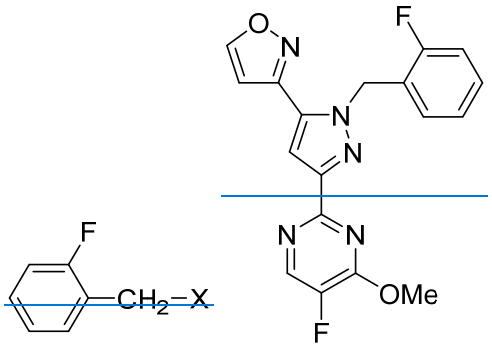
(4')

iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):



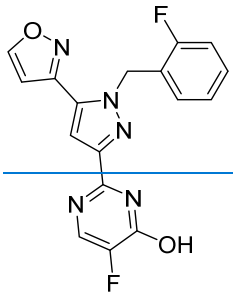
(24')

iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**) to provide the compound of Formula V:



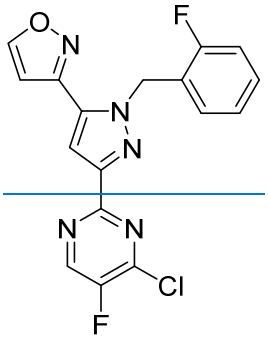
(23A) Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



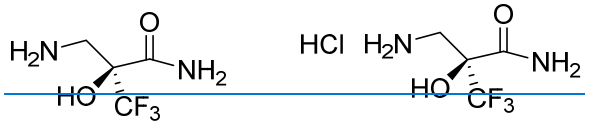
**(9')** ;

~~v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI ~~, and~~

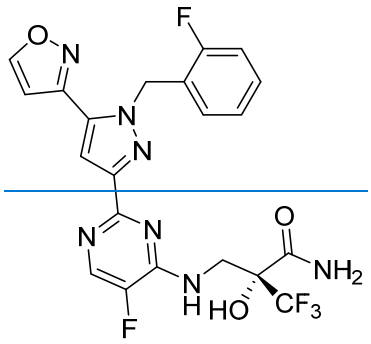
~~vi) reacting an amine of formula **(19A)** or its HCl salt of formula **(19)**:~~



(**19A**) (**19**)

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC, wherein X is a leaving group selected from –Br, -I, -Cl, -F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).~~

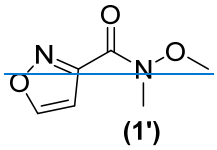
~~26. A process of preparing a compound of Formula ID:~~



Formula ID ;

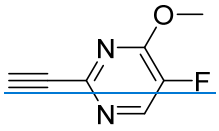
~~comprises the steps of:~~

~~i) coupling an amide for formula (1'):~~



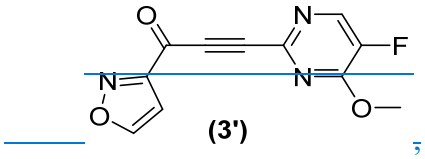
(1') ;

~~with a pyrimidine compound of formula (2):~~



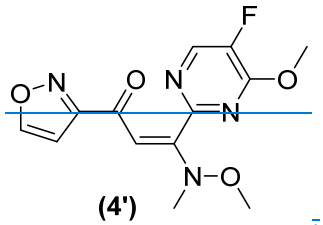
(2) ;

~~in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula (3'):~~



(3') ;

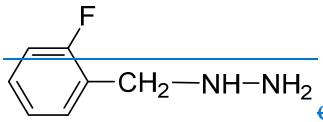
~~ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula (4'):~~



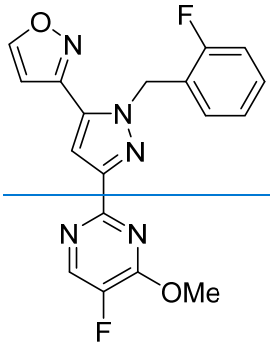
(4')

;

iii) condensing the compound of formula **(4')** with a hydrazine of formula



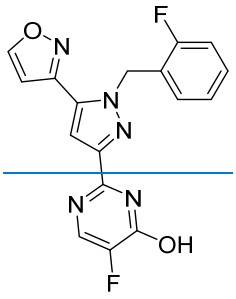
or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



Formula V

;

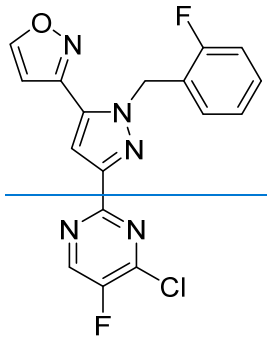
iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



**(9')**

;

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

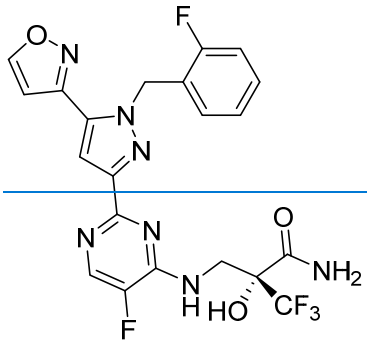
vi) reacting an amine of formula **(15A)** or its HCl salt of formula **(15)**:



(**15A**) (**15**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID.

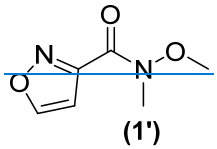
27. A process of preparing a compound of Formula ID:



Formula ID ,

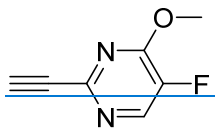
comprising the steps of:

i) coupling an amide of formula **(1')**:



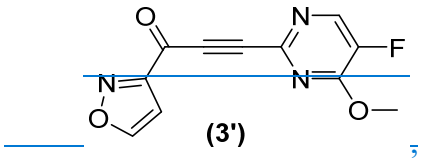
(**1'**)

with a pyrimidine compound of formula **(2)**:



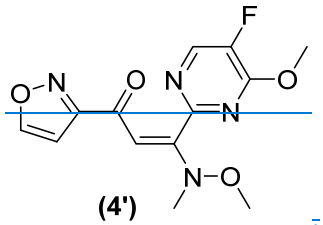
**(2)** ;

~~in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:~~



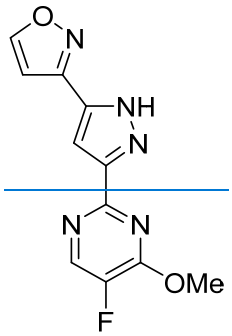
**(3')** ;

~~ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:~~



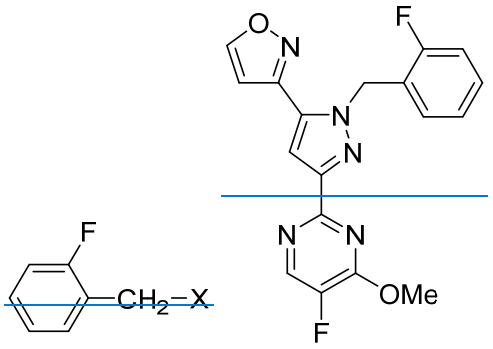
**(4')** ;

~~iiia) condensing the compound of formula **(4')** with hydrazine (*e.g.*, hydrazine hydrate) to form the compound of formula (**24'**):~~



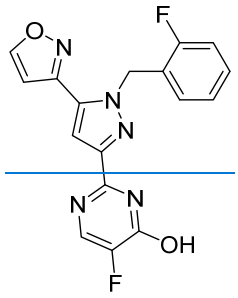
**(24')** ;

~~iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**) to provide the compound of Formula V:~~



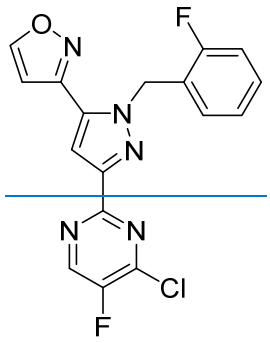

**(23A)** Formula V ,

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9'):**




**(9')** ,

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:




Formula VI , and

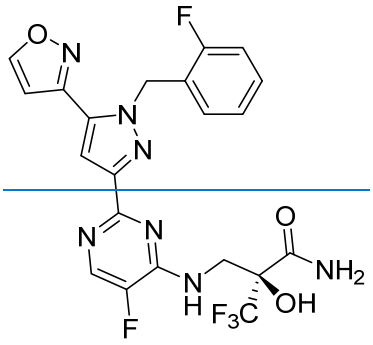
vi) reacting an amine of formula **(15A)** or its HCl salt of formula **(15):**



(**15A**) (**15**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (*e.g.*, mesylate, tosylate or triflate).

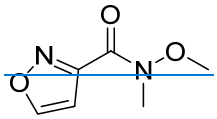
28. A process of preparing a compound of Formula IC:



Formula IC ;

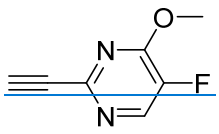
comprises the steps of:

i) coupling an amide for formula **(1')**:



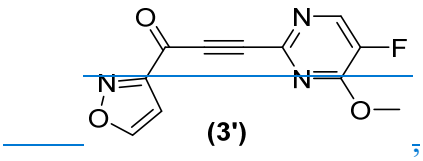
**(1')**

with a pyrimidine compound of formula **(2)**:



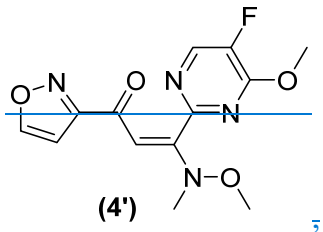
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



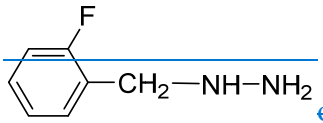

(3')

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:

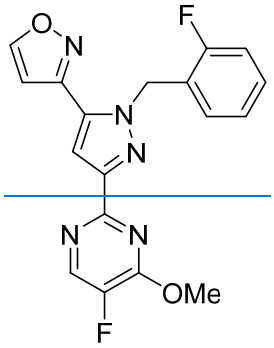



**(4')**

iii) condensing the compound of formula **(4')** with a hydrazine of formula

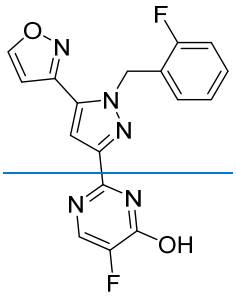



or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



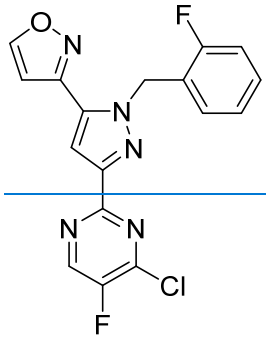

Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



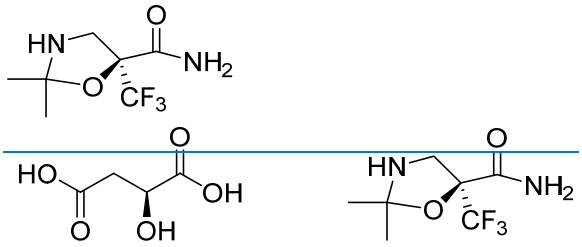
**(9')** ;

~~v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI ~~; and~~

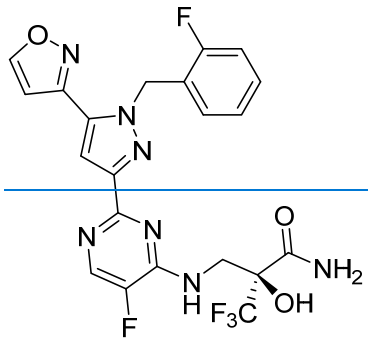
~~vi) reacting an (*L*) malic acid salt of an amine **(21)** represented by formula **(18)**:~~



(**18**) (**21**)

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC.~~

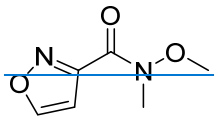
29. A process of preparing a compound of Formula IC:



Formula IC ,

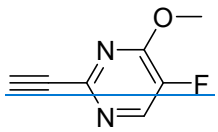
comprising the steps of:

i) coupling an amide of formula **(1')**:



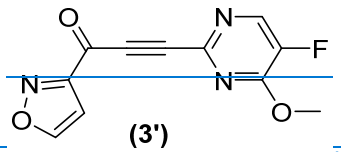
**(1')**

with a pyrimidine compound of formula **(2)**:



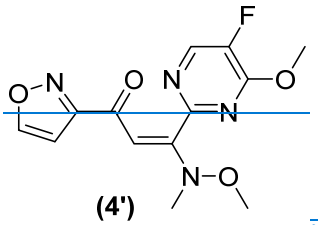
**(2)** ,

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**:



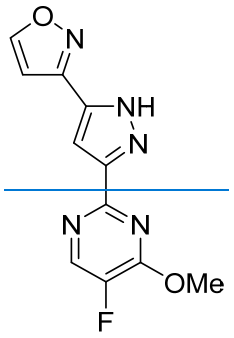
**(3')** ,

ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



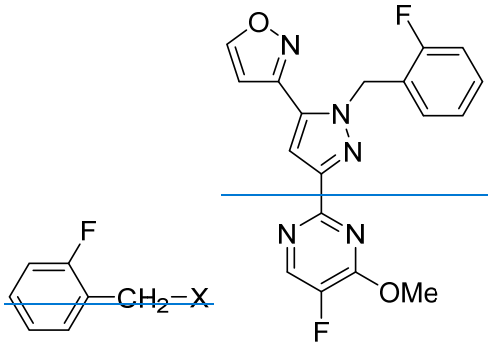
**(4')**

iiia) condensing the compound of formula **(4')** with a hydrazine (*e.g.*, hydrazine hydrate) to form a compound of formula **(24')**:



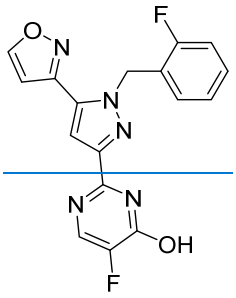
**(24')**

iiib) alkylating intermediate of formula **(24')** with an alkylating agent of formula **(23A)** to provide the compound of Formula V:



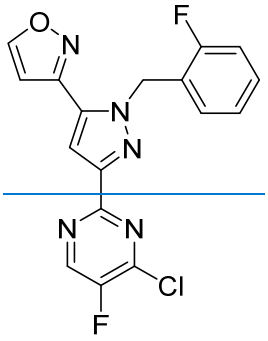
**(23A)** Formula V

iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



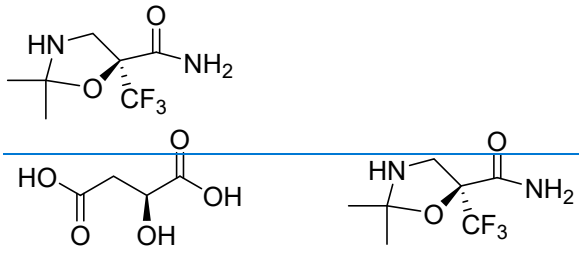
**(9')** ;

~~v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:~~



Formula VI ~~, and~~

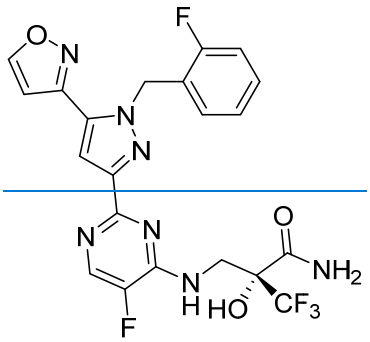
~~vi) reacting an (*L*) malic acid salt of an amine **(21)** represented by formula **(18)**:~~



(**18**) (**21**)

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula IC, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).~~

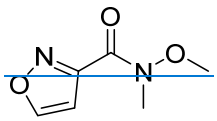
30. A process of preparing a compound of Formula ID:



Formula ID

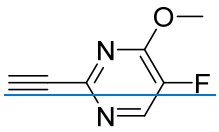
comprising the steps of:

i) coupling an amide of formula **(1')**:



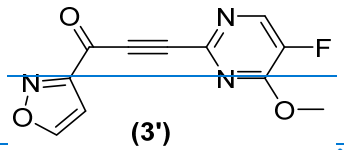
**(1')**

with a pyrimidine compound of formula **(2)**:



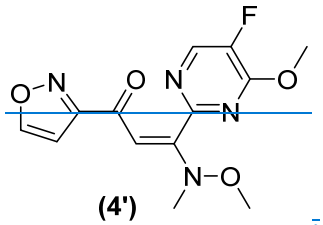
**(2)** ;

in an aprotic organic solvent in the presence of a base, to form, after quenching with an acid, an intermediate of formula **(3')**



**(3')** ;

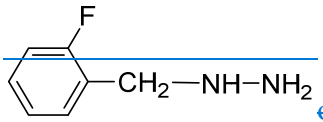
ii) at a pH >5, optionally in the presence of added *N,O*-dimethylhydroxylamine or a salt thereof, allowing the mixture to react to form the compound of formula **(4')**:



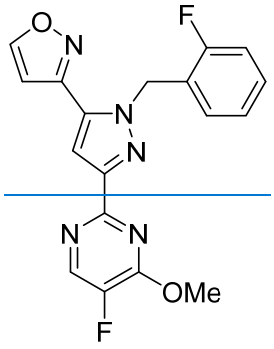
**(4')**

;

iii) condensing the compound of formula **(4')** with a hydrazine of formula



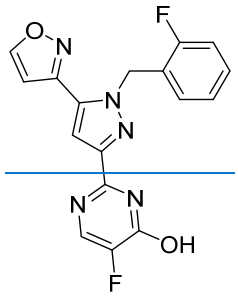
or a salt thereof, optionally in the presence of a base, to form a compound of Formula V:



Formula V

;

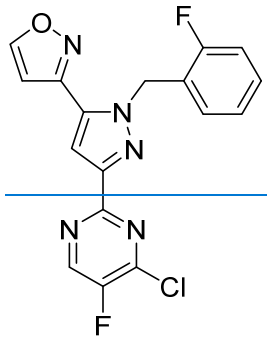
iv) de-methylating the compound of Formula V to form an alcohol compound of formula **(9')**:



**(9')**

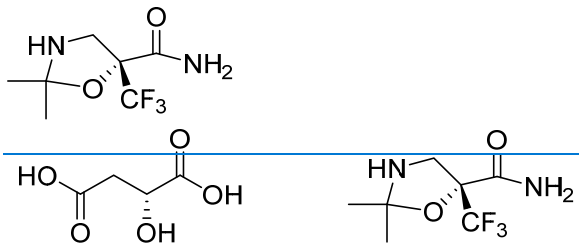
;

v) chlorinating the alcohol compound of formula **(9')** with phosphoryl chloride to form a compound of Formula VI:



Formula VI , and

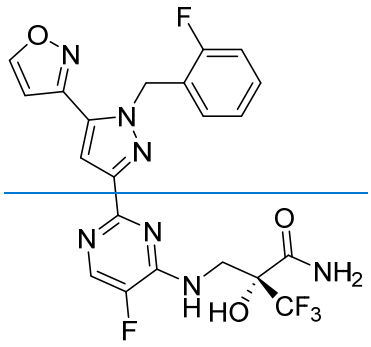
vi) reacting a (*D*) malic acid salt of an amine (**20**) represented by formula (**14**):



(**14**) (**20**)

with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID.

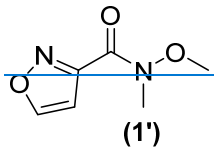
31. A process of preparing a compound of Formula ID:



Formula ID ,

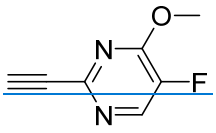
comprising the steps of:

i) coupling an amide of formula **(1')**:



(1')

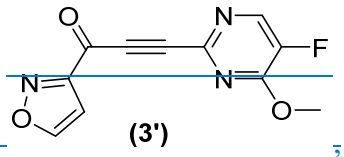
with a pyrimidine compound of formula **(2)**:



(2)

;

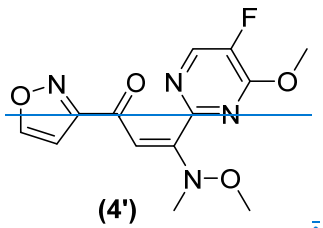
in an aprotic organic solvent in the presence of a base, to form, after quenching with acid, an intermediate of formula **(3')**:



(3')

;

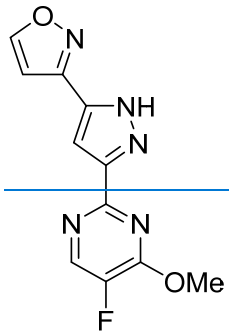
ii) at a pH >5, optionally in the presence of added *N*,*O*-dimethylhydroxylamine or a salt (*e.g.* HCl salt) thereof, allowing the mixture to react to form the compound of formula **(4')**:



(4')

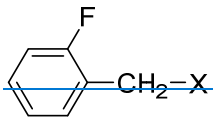
;

iiia) condensing the compound of formula **(4')** with a hydrazine (*e.g.*, hydrazine hydrate) to form a compound of formula **(24')**:



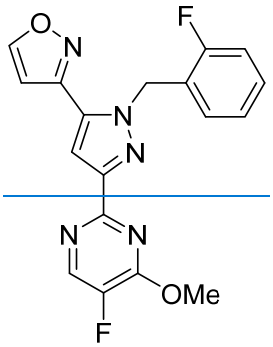
**(24')** ;

~~iiib) alkylating intermediate of formula (**24'**) with an alkylating agent of formula (**23A**)~~



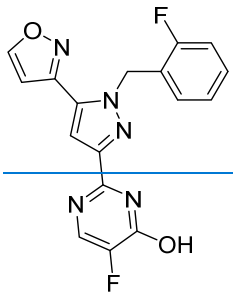
**(23A)**

~~to provide the compound of Formula V:~~



Formula V ;

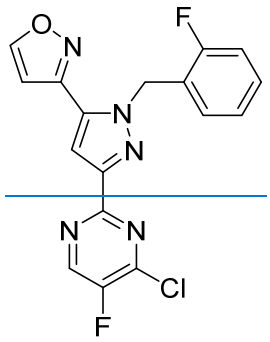
~~iv) de-methylating the compound of Formula V to form an alcohol compound of formula (**9'**):~~



**(9')** ;

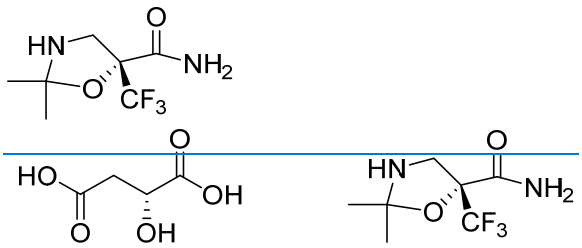
~~v) chlorinating the alcohol compound of formula (**9'**) with phosphoryl chloride to form a~~

~~compound of Formula VI:~~



Formula VI ~~, and~~

~~vi) reacting a (*D*) malic acid salt of an amine (**20**) represented by formula (**14**):~~



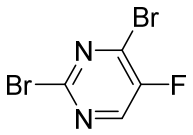
(**14**) (**20**)

~~with the compound of Formula VI, optionally in the presence of a base, to yield the compound of Formula ID, wherein X is a leaving group selected from –Br, –I, –Cl, –F, and a sulfonate ester (e.g., mesylate, tosylate or triflate).~~

~~32. The process of claim 30 or 31, further comprising the step of crystallization of the compound of Formula ID to yield Form B of the compound, optionally wherein the crystallization comprises the steps of: A) dissolving the compound of Formula ID in acetonitrile and water at between a temperature between 40 °C and 80 °C to form a solution of the compound; B) filtering the solution of step A) to form a filtered solution of the compound; C) heating the filtered solution at a temperature between 40 °C and 80 °C and adding water to yield a slurry; D) cooling the slurry of step C) to yield crystalline Form B of the compound of Formula ID; and E) filtering and drying the crystalline Form B of the compound of Formula ID.~~

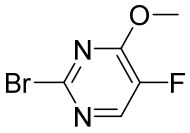
14. The process of any one of claims 1-13, wherein the compound of formula **(2)** is prepared by a process comprising the steps of:

a) reacting dibromopyrimidine compound of formula **(5)**:



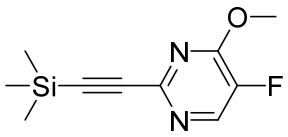
**(5)**

with a base in methanol or a methoxide salt in an aprotic solvent to form a bromopyrimidine compound of formula **(6)**:



**(6)**,

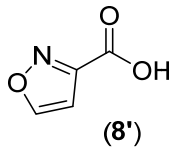
b) coupling the bromopyrimidine compound of formula **(6)** with ethynyltrimethylsilane, in an aprotic organic solvent in the presence of a base and a Pd catalyst, and optionally in the presence of a Cu(I) catalyst, to form a compound of formula **(7)**:



**(7)**, and

c) de-silylating the compound of formula **(7)** to form the pyrimidine compound of formula **(2).**

15. The process of any one of claims 9-13, wherein the compound of formula **(1')** is prepared by reacting a carboxylic acid of formula **(8')**



**(8')**

with oxalyl chloride or an equivalent amide coupling reagent, followed by *N,O*-dimethylhydroxylamine or a salt thereof, in the presence of a base to form the amide of formula **(1').**

~~33~~16. The process of any one of claims 1-~~32~~15, wherein the base in step i) is n-butyllithium.

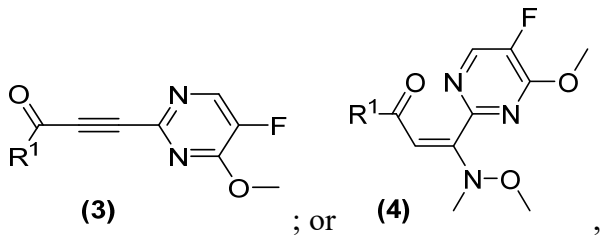
~~34~~17. The process of any one of claims 1-~~33~~16, wherein the process comprises contacting the reaction product of the reaction between the amide of formula (**1**) or (**1'**) and the pyrimidine compound of formula (**2**) with a solution comprising *N*,*O*-dimethylhydroxylamine or a salt thereof and an acid to form the compound of formula (**4**) or (**4'**).

~~35~~18. The process of claim ~~34~~17, wherein the solution comprises *N*,*O*-dimethylhydroxylamine hydrochloride.

~~36~~19. The process of claim ~~34~~ 17 or ~~35~~18, wherein (i) the acid is an aqueous acid; (ii) the acid is hydrochloric acid; or (iii) the acid is glacial acetic acid.

~~37~~20. The process of any one of claims 3, ~~13, 20, 23, 25, 27, 29~~11 and ~~31-36~~13-16, wherein X is –Br.

~~38~~21. A compound of formula **(3)** or **(4)**:

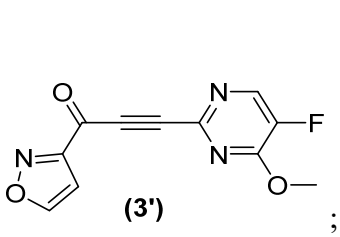


,

wherein $R^1$ is phenyl, or a 5 to 6-membered heteroaryl ring; optionally substituted with up to three instances independently selected from the group consisting of halogen or methyl; wherein said 5 or 6-membered heteroaryl ring contains up to 3 ring atoms selected from the group consisting of N, S or O.

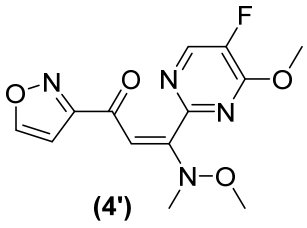
~~39~~22. The compound of claim ~~38~~21, wherein (i) $R^1$ is a 5-membered heteroaryl ring or (ii) $R^1$ is an unsubstituted 5-membered heteroaryl ring containing up to 2 ring heteroatoms selected from the group consisting of N and O.

~~40~~23. The compound of claim ~~39~~22, wherein the compound is represented by formula **(3')** or **(4'):**



(3')

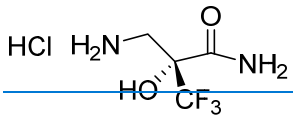
; or



(4')

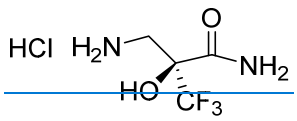
.

~~41. A compound represented by any one of the following formulae:~~



(15)

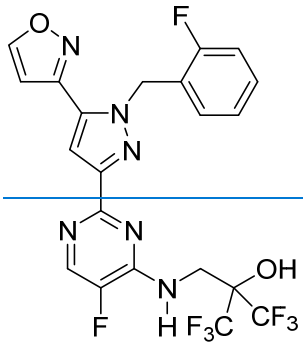
~~; and~~



(19)

~~;~~

~~42. Crystalline Form A of the compound of Formula IA:~~



Formula IA

~~;~~

~~having at least one, two, three, four, five, six, seven or eight major peaks in an x-ray powder diffraction (XRPD) pattern selected from selected from 4.2, 9.1, 9.8, 17.2, 17.7, 18.2, 27.5, and 36.0 degree 2θ angles; optionally the crystalline Form A has (i) the XRPD pattern of FIG. 1; (ii) an endothermic onset at a temperature between 160 °C and 165 °C in a differential scanning calorimetry (DSC) profile; and/or (iii) an endothermic onset at 163.1 °C; and optionallyat least 70%, 80%, 90%, 95%, 98%, 99%, 99.5%, or 99.9% of the compound is the crystalline Form A of the compound.~~