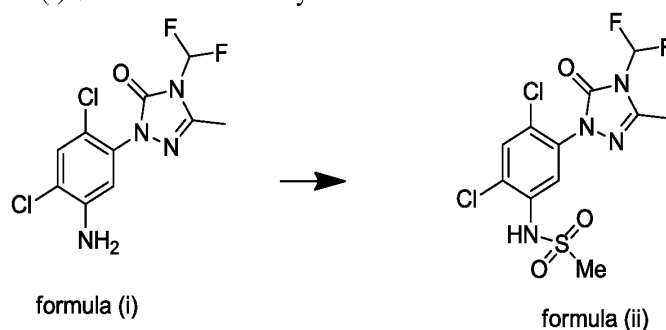


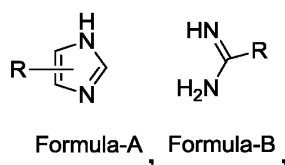
CLAIMS

What is claimed is:

1. A process for the synthesis of sulfentrazone, comprising reacting sulfentrazone amine of formula (i) with methanesulfonyl chloride



in the presence of a catalyst selected from imidazole, 1*H*-1,2,4-triazole, benzimidazole, a compound of Formula-A, a compound of Formula-B or salts thereof



wherein

R in both Formulae-A and B each independently represents hydrogen, amino, optionally substituted C₁₋₁₀ alkyl, C₁₋₁₀ haloalkyl, C₁₋₁₀ alkoxy or aryl.

2. The process of claim 1, wherein the compound of Formula-A is 2-methylimidazole, 4-methylimidazole, 5-methylimidazole, 2-ethylimidazole, 4-ethylimidazole, 5-ethylimidazole, 2-phenylimidazole, 4-phenylimidazole or 5-phenylimidazole.

3. The process of claim 1, wherein the compound of Formula-B is formamidine, acetamidine or salts thereof.

4. The process of claim 3, wherein the compound of Formula-B is formamidine hydrochloride, acetamidine hydrochloride, formamidine sulfate, acetamidine sulfate, formamidine phosphate or acetamidine phosphate.

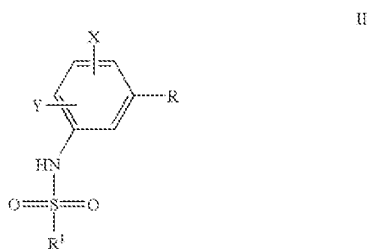
5. The process of claim 1, wherein the process is carried out in a solvent.

6. The process of claim 2, wherein the solvent is selected from aromatic, alkane, and alkene solvents, and any mixtures thereof.

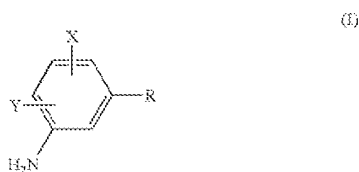
7. The process of claim 3, wherein the solvent is selected from toluene, xylene, diethylbenzene, and any mixtures thereof.

8. The process of claim 4, wherein the solvent is toluene.
9. The process of claim 1, wherein the process is carried out at an elevated temperature, with the preferred temperature ranging from about 110°C to about 160°C.
10. The process of claim 6, wherein the temperature ranges from about 120°C to about 130°C.
11. The process of claim 1, wherein the process is carried out at atmospheric pressure or higher pressure.
12. The process of claim 1, wherein the process is carried out at a pressure ranging from about 0.15 MPa to about 1 MPa.
13. The process of claim 1, wherein the catalyst is present in an amount ranging from about 0.01 to about 0.2 molar equivalents of sulfentrazone amine.
14. The process of claim 13, wherein the catalyst is imidazole.
15. The process of claim 13, wherein the catalyst is present in an amount ranging from about 0.05 to 0.15 molar equivalent of sulfentrazone amine.
16. The process of claim 15, wherein the catalyst is imidazole.
17. The process of claim 13, wherein the catalyst is benzimidazole, 2-methylimidazole, 2-ethylimidazole, 2-phenylimidazole, formamidine hydrochloride or acetamidine hydrochloride and the catalyst is present in an amount ranging from about 0.01 to about 0.035 molar equivalents to sulfentrazone amine.
18. The process of claim 1, wherein methanesulfonyl chloride is present in excess of sulfentrazone amine.
19. The process of claim 18, wherein methanesulfonyl chloride is maintained in excess of sulfentrazone amine throughout the process.
20. The process of claim 18, wherein methanesulfonyl chloride and sulfentrazone amine are present in a molar ratio ranging from about 1 to about 2.
21. The process of claim 20, wherein methanesulfonyl chloride and sulfentrazone amine are present in a molar ratio ranging from about 1.5 to about 2.
22. A process for the preparation of a sulfonamide of formula II:

14



comprising reacting at elevated temperature at least the following: (1) an aniline of formula I:



5

with (2) a sulfonating agent A of the formula $\text{R}^1 - \text{SO}_2 - \text{Z}$ in the presence of (3) a catalytic amount of a catalyst;

wherein:

10 the catalyst is imidazole, 1*H*-1,2,4-triazole, benzimidazole, 2-methylimidazole, 2-ethylimidazole, 2-phenylimidazole, formamidine hydrochloride or acetamidine hydrochloride;

15 X and Y in both formulae I and II and Z are each independently selected from the group consisting of hydrogen, halo, alkyl, haloalkyl, amino, nitro, alkoxy, hydroxy, anhydridyl, alkylthio, arylthiol, aryloxy, alkylsulfonyl, arylsulfonyl, and substituted or unsubstituted aryl, the substituents of said substituted aryl comprising one or more members selected from the group consisting of halo, C_{1-20} alkyl, C_{1-20} alkoxy, nitro, amino, amido, alkylthio, aryl, arylthio, aryloxy, alkylsulfonyl, and arylsulfonyl;

20 R in both formulae I and II is selected from the group consisting of hydrogen, alkyl, haloalkyl, aryloxy, substituted or unsubstituted aryl and substituted or unsubstituted heterocyclyl, the substituents of said substituted aryl or heterocyclyl comprising one or more members selected from the group consisting of halo, C_{1-20} alkyl, C_{1-20} alkoxy, nitro, amino, amido, alkylthio, aryl, arylthio, aryloxy, alkylsulfonyl, and arylsulfonyl; and

25 R^1 is selected from the group consisting of hydrogen, alkyl, haloalkyl, and aryl.

23. The process of claim 22, wherein the catalyst is imidazole.