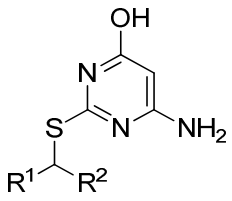
CLAIM

1. A process for the preparation of a compound of formula I,



(I)

or a salt thereof, wherein

R^1 represents aryl or pyridyl optionally substituted with one or more groups selected from halo, -CN, $-C(O)NR^3R^4$, $-S(O)_2R^5$; C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, wherein the latter three groups are optionally substituted by one or more F;

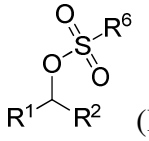
R^2 represents C_{1-6} alkyl optionally substituted by one or more F;

R^3 and R^4 each independently represent H or C_{1-6} alkyl optionally substituted by one or more F;

R^5 represents C_{1-6} alkyl optionally substituted by one or more F;

which process comprises the steps of:

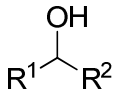
(i) forming a compound of formula II,



(II)

wherein R^1 and R^2 are as defined for a compound of formula I and R^6 represents C_{1-6} alkyl optionally substituted by one or more F, or phenyl optionally substituted by one or more groups selected from halo, methyl and $-NO_2$;

by reacting a compound of formula III


(III)

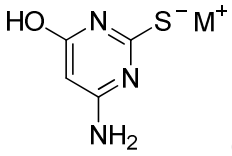
wherein R^1 and R^2 are as defined for a compound of formula I or II;

with a suitable sulfonating agent in the presence of a suitable base B^1

and a suitable solvent S^1,

and subsequently

(ii) reacting the compound of formula II, with a compound of formula IV,


(IV)

wherein M^+ represents Li^+, Na^+, K^+ or Cs^+

wherein the compound of formula III is provided as a single enantiomer.

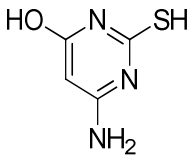
2. [[A]]The process as claimed in Claim 1, wherein the compound of formula II is not isolated from the reaction mixture from step (i) before it is used in step (ii).

3. [[A]]The process as claimed in Claim 1, wherein S^1 is a solvent in which the salt formed between B^1 and the leaving group of the sulfonating agent is insoluble.

4. [[A]]The process as claimed in Claim 1, wherein step (ii) comprises bringing a solution of a compound of formula II in a suitable solvent S^1 into association with a solution of a compound of formula IV in a suitable solvent S^2.

5. [[A]]The process as claimed in Claim 1, wherein the process further comprises the step of:

(iii) preparing a compound of formula IV by reacting a compound of formula V



(V)

with a suitable base B^2 in the presence of a suitable solvent S^2,
optionally wherein the solution of a compound of formula IV is obtained from step (iii), after one or more purification steps.

6. [[A]]The process as claimed in Claim 1, wherein S^1 is selected from the group consisting of diethyl ether, methyl *tert*-butyl ether, 1,2-dimethoxyethane, 1,4-dioxane, tetrahydrofuran and 2-methyltetrahydrofuran~~,~~

7. [[A]]The process as claimed in Claim 1, wherein B^1 is an organic amine base,

8. [[A]]The process as claimed in Claim 4, wherein S^2 is a polar aprotic solvent,

9. [[A]]The process as claimed in Claim 5[[1]], wherein B^2 is selected from the group consisting of lithium hydroxide, lithium carbonate, sodium hydroxide, sodium carbonate, potassium hydroxide, potassium carbonate, caesium hydroxide and caesium carbonate,

10. [[A]]The process as claimed in Claim 1, wherein R^1 represents aryl or pyridyl optionally substituted with one or more groups selected from halo, -CN, $-SO_2Me$, or $-CONH_2$,

11. [[A]]The process as claimed in Claim 1, wherein R^2 represents C_{1-3} alkyl

12. [[A]]The process as claimed in Claim 1, wherein the process further comprises the step of:

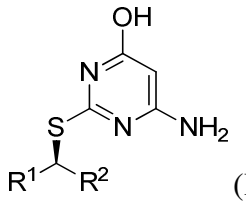
(ib) removal of the salt formed between B^1 and the leaving group of the sulfonating agent from the solution of a compound of formula II in S^1 obtained from step (i).

13. [[A]]The process as claimed in Claim 1, further comprising the step of:

(iv) treating the crude material obtained from step (ii) with a suitable solvent S^4 to cause precipitation of the compound of formula I, optionally wherein S^4 is acetonitrile.

14. [[A]]The process as claimed in Claim 1, wherein the sulfonating agent is mesyl chloride or tosyl chloride.

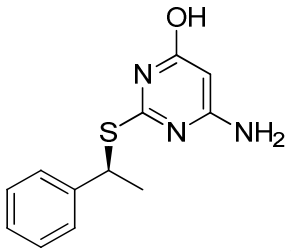
15. [[A]]The process as claimed in Claim 1, wherein the process is a process for the preparation of a compound of formula Ia, or a salt thereof,



(Ia)

wherein R^1 represents aryl or pyridyl optionally substituted with one or more groups selected from halo, -CN, $-C(O)NR^3R^4$, $-S(O)_2R^5$; C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, wherein the latter three groups are optionally substituted by one or more F, and R^2 represents C_{1-6} alkyl optionally substituted by one or more F.

16. [[A]]The process as claimed in Claim 23, wherein the compound of formula Ia is 6-amino-2-{[(1S)-1-phenylethyl]sulfanyl}pyrimidin-4-ol, or a salt thereof



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17. [[A]]The process as claimed in Claim 23, wherein the compound of formula Ia has a chiral purity of greater than 96%.

18. The process as claimed in Claim 1, wherein S^1 is methyl *tert*-butyl ether.

19. The process as claimed in Claim 1, wherein B^1 is trimethylamine.

20. The process as claimed in Claim 4, wherein S^2 is *N,N*-dimethylformamide.

21. The process as claimed in Claim 5, wherein B^2 is sodium hydroxide.

22. The process as claimed in Claim 1, wherein R^1 represents phenyl.

23. A process as claimed in Claim 1, wherein R^2 represents methyl.