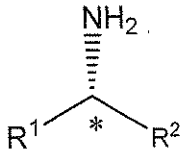
What is claimed is:

1. A process for preparing an amine product of structural formula (I):



(I)

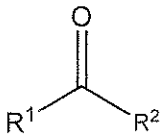
having the indicated stereochemical configuration at the stereogenic center marked with an *; in an enantiomeric excess over the opposite enantiomer, wherein

R^1 is optionally substituted aryl or heteroaryl;

R^2 is an optionally substituted C_1-C_6 alkyl, $-R^3C(O)R^4$, or $-R^3OC(O)R^5$

R^3 is an optionally substituted C_1-C_4 alkyl, and R^4 is H, an optionally substituted C_1-C_4 alkyl, NR^6R^7, or OR^8, where R^5, R^6, R^7, and R^8 are independently H or C_1-C_4 alkyl;

the process comprising contacting a ketone substrate of structural formula (II):



(II)

with a transaminase polypeptide in presence of an amino donor under reaction conditions suitable for converting the ketone substrate to the amine product, wherein the transaminase polypeptide has at least 80% sequence identity to SEQ ID NO:74 and is capable of converting the ketone substrate to the amine product at a rate that is improved as compared to SEQ ID NO:2~~.~~, and wherein the transaminase polypeptide comprises an amino acid sequence having a residue difference as compared to SEQ ID NO: 2 at one or more positions, wherein the amino acid residue at the position of the residue difference is selected from: X61 is Y; X62 is T, Y or F, X65 is A; X69 is C or T; X94 is I or L; X122 is I or M; X136 is Y or F; X199 is I; X209 is L; X215 is C; X223 is P; X282 is S; and X284 is G.

2. The process of claim 1, wherein R^1 is an optionally substituted phenyl.

3. The process of claim 1, wherein R^1 is an optionally substituted pyridinyl.

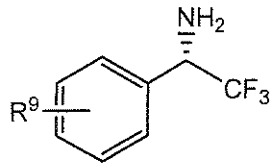
4. The process of claim 1, wherein R^1 is a substituted aryl or heteroaryl.

5. The process of claim 1, wherein the substitution on the C_1-C_6 alkyl and R^3 are selected from halogen, NR^5R^6, or OR^8, where R^5 and R^6 are defined above and R^8 is H or C_1-C_4 alkyl.

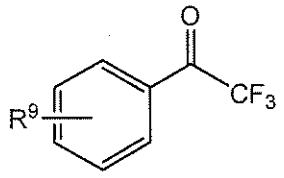
6. The process of claim 1, wherein R^2 is methyl or halo substituted methyl.

7. The process of claim 6, wherein the halo substituted methyl is CF_2H or CF_3.

8. The process of claim 1, wherein the amine product of formula (I) is:

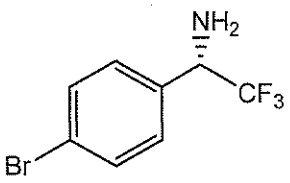


wherein R^9 is H, Cl, Br, F, CH_3, CF_3, CN, SO_2, $-OCH_3$, $-C(O)CH_3$, or NO_2, and the ketone substrate of formula (II) is:

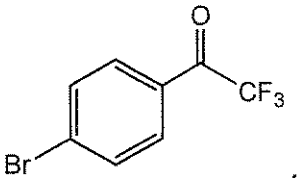


9. The process of claim ~~9~~ 8 wherein R^9 is in the para position on the phenyl ring.

10. The process of claim 1 wherein the amine product of formula (I) is (*S*)-1-(4-bromophenyl)-2,2,2-trifluoroethanamine:



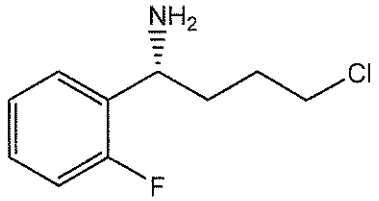
and the ketone substrate of formula (II) is 1-(4-bromophenyl)-2,2,2-trifluoroethanone:



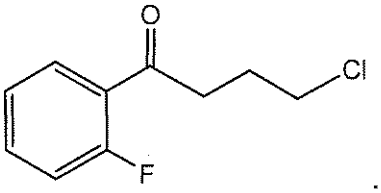
11. The process of claim 1 wherein the amine product of formula (I) is (*S*)-2,2,2-trifluoro-1-p-tolylethanamine:

wherein R^{11} is halogen, OH, -C(O)R^4, -OC(O)R^5, or NR^6R^7, wherein R^4, R^5, R^6, R^7, R^7 and R^{10} are defined above.

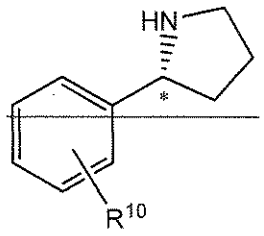
16. The process of claim 1, wherein the amine product of formula (I) is (*S*)-4-chloro-1-(2-fluorophenyl)butan-1-amine:



and the ketone substrate of formula (II) is 4-chloro-1-(2-fluorophenyl)butan-1-one:



~~17. A process for preparing the compound of formula (III) :~~



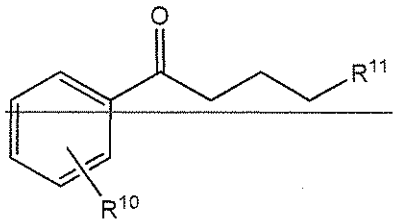
~~(III)~~

~~having the indicated stereochemical configuration at the stereogenic center marked with an * in an enantiomeric excess over the opposite enantiomer,~~

~~wherein, R^{10} is Cl, Br, F, CH_3, CF_3, CN, SO_2, OCH_3, or NO_2,~~

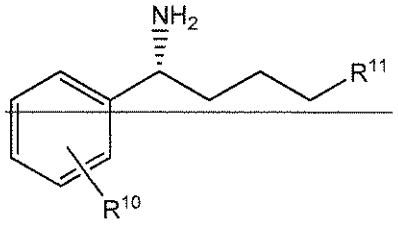
~~the process comprising:~~

~~(a) contacting a ketone substrate of formula:~~



~~wherein R^8 is halogen, OH, $-C(O)R^4$, $-OC(O)R^5$, or NR^6R^7, wherein R^4, R^5, R^6, and R^7 is H or C_1-C_4 alkyl, and R^{10} is as defined above,~~

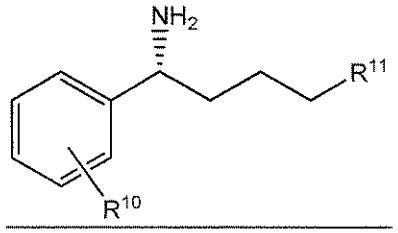
~~with a transaminase polypeptide in presence of an amino donor under reaction conditions suitable for converting the ketone substrate to an amine product of formula:~~



~~wherein the transaminase polypeptide has at least 80% sequence identity to SEQ ID NO:74 and is capable of converting the ketone substrate to the amine product at a rate that is improved as compared to SEQ ID NO:2.; and~~

~~(b) cyclizing the amine product under suitable conditions to form the compound of formula (III).~~

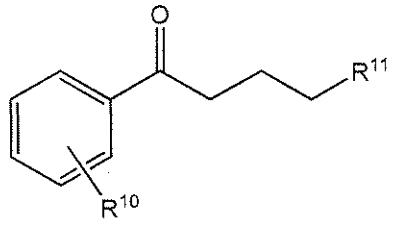
17. The process of claim 1, wherein the amine product of formula (I) is:



(I)

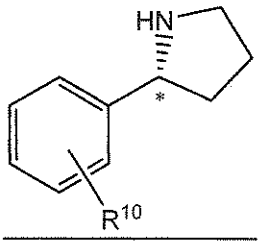
wherein R^{11} is halogen, OH, $-C(O)R^4$, $-OC(O)R^5$, or NR^6R^7, wherein R^4, R^5, R^6, R^7, R^7 and R^{10} are Cl, Br, F, CH_3, CF_3, CN, SO_3, $-OCH_3$ or NO_2;

and the ketone substrate of formula (II) is:



(II)

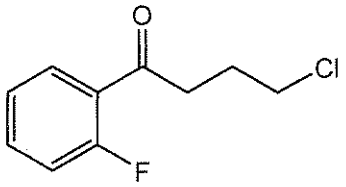
wherein R^{10} and R^{11} are as defined above, and wherein the method further comprises cyclizing the amine product of formula (I) under suitable conditions to form the compound of formula (III)



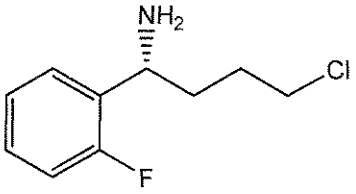
(III)

having the indicated stereochemical configuaration at the stereogenic center marked with a * in an enantiomeric excess over the opposite enantiomer.

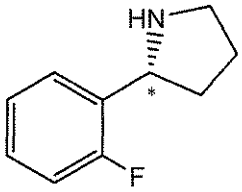
18. The process of claim 17, wherein the ketone substrate of formula (II) is 4-chloro-1-(2-fluorophenyl)butan-1-one:



and the amine product of formula (I) is (*S*)-4-chloro-1-(2-fluorophenyl)butan-1-amine:



thereby forming (*R*)-2-(2-fluorophenyl)pyrrolidine as the compound of formula (III):



in enantiomeric excess.

34. The process of claim 33, wherein the DMSO is between about 10% to about 40% (v/v).

35. The process of any one of claims 1 to 18, wherein the substrate is present at 5 to 25 g/L.

36. The process of any one of claims 1 to 18, wherein the transaminase further comprises an amino acid sequence having a residue difference as compared to SEQ ID NO:2 at one or more residue positions selected from: X4; X5; X8; X18; X25; X26; X27; X28; X30; X41; X42; X48; X49; X50; X54; X55; X60; ~~X61; X62; X65;~~ X81; ~~X94;~~ X96; X102; X117; X120; X124; X126; ~~X136;~~ X137; X138; X146; X148; X150; X152; X155; X156; X160; X163; X164; X169; X174; X178; X195; ~~X199;~~ X204; X208; ~~X209;~~ X211; ~~X215;~~ X217; X225; X230; X252; X269; X273; ~~X282,~~ X292; X297; X306; X321; and X329.

37. The process of claim 36, wherein the residue difference with a transaminase polypeptide of SEQ ID NO:2 occurs at one or more residue positions selected from: ~~X62, X69, X122, X136,~~ X137, X195, ~~X199,~~ X208, ~~X209, X223,~~ and X225~~, X282, and X284~~.

38. The process of claim 36, wherein the type of amino acid residue at the position of the residue difference is selected from:

X4 is an aromatic residue,

X8 is a constrained residue;

X26 is an aromatic or constrained residue;

X48 is a polar, acidic, aliphatic or non-polar residue;

X60 is an aromatic residue;

~~X61 is an aromatic residue;~~

~~X62 is an aromatic or polar residue;~~

~~X65 is an aliphatic residue;~~

~~X69 is a cysteine (C) or non-polar, polar, or aliphatic residue~~

X81 is a non-polar residue;

~~X94 is an aliphatic residue;~~

X96 is an aliphatic residue;

X102 is an aliphatic or basic residue;

~~X122 is a constrained, non-polar or aliphatic residue;~~

X124 is a polar or constrained residue;

~~X136 is an aromatic residue;~~

X137 is a polar or aliphatic residue;

X150 is aromatic, constrained or polar residue;

X152 is cysteine (C), non-polar, aliphatic, or polar residue;

X160 is an aliphatic residue;

X163 is an aliphatic or constrained residue;

X169 is an aliphatic residue;

X174 is an aliphatic residue;

X178 is a polar residue;

X195 is an aromatic or polar residue;

~~X199 is an aliphatic or aromatic residue;~~

X208 is cysteine (C) or constrained, non-polar, aromatic, polar, or basic residue;

~~X209 is an aliphatic residue;~~

X211 is an aliphatic residue;

~~X215 is a cysteine (C);~~

X217 is a polar residue;

~~X223 is a constrained residue;~~

X225 is an aromatic residue;

X230 is an aliphatic residue;

X252 is an aromatic or aliphatic residue;

X269 is a constrained residue;

X273 is an aromatic residue;

~~X282 is a polar residue;~~

~~X284 is a non-polar residue~~

X292 is a polar residue;

X297 is a polar residue;

X306 is an aliphatic residue;

X321 is a constrained residue, and

X329 is a constrained or aromatic residue.

39. The process of claim 36, wherein the amino acid residue at the position of the residue difference is selected from: X4 is Y; X8 is P; X26 is H; X48 is Q, D, V, G, or A; X60 is F; ~~X61 is Y; X62 is T , Y or F; X65 is A; X69 is G, C, T, A, or S;~~ X81 is G; ~~X94 is I or L;~~ X96 is L; X102 is L or K; ~~X122 is M, I, L, V, or H;~~ X124 T, H or N; ~~X136 is Y or F;~~ X137 is T or I; X150 is F, H, or S; X152 is I, L, S or C; X160 is L; X163 is H or V; X169 is L; X174 is A; X178 is S; X195 is F or Q; ~~X199 is W or I;~~ X208 is H, C, G, K, N, Y, D or S; ~~X209 is L;~~ X211 is I; ~~X215 is C;~~ X217 is N; ~~X223 is P;~~ X225 is Y; X230 is V; X252 is F; X269 is P; X273 is Y; ~~X282 is S; X284 is G;~~ X292 is T; X297 is S; X306 is L; X321 is P; and X329 is H.

40. The process of claim 39, wherein the amino acid residue at the position of the residue difference is selected from: X8 is P; X60 is F; ~~X61 is Y; X62 is T , Y or F; X65 is A; X69 is~~

~~G, C, T, A, or S;~~ X81 is G; ~~X94 is I or L;~~ X96 is L; ~~X122 is M, I, L, V, or H;~~ X124 T, H or N; ~~X136 is Y or F;~~ X169 is L; X178 is S; ~~X199 is W or I; X209 is L; X215 is C;~~ X217 is N; ~~X223 is P;~~ X269 is P; X273 is Y; ~~X282 is S; X284 is G;~~ X297 is S; X321 is P and X329 is H..

41. The process of claim 36, wherein the transaminase polypeptide has an amino acid sequence that corresponds to the sequence of SEQ ID NO: 58, 72, 74, 80, 86, 96, 98, 100, or 102.