WE CLAIM:

1. A compound having a structure which is:

![Chemical Structure](image)

wherein $R^3$ is $-\text{CH}_2\text{NO}_2$ or $-\text{CH}_2\text{NH}_2$;

$R^4$ is selected from the group consisting of chlorine, bromine, methyl, ethyl,
propyl, isopropyl, butyl, isobutyl, sec-butyl, and methoxy, ethoxy,
propoxy, isopropoxy, butoxy, isobutoxy, and sec-butoxy

$Y$ is O or S; and

$R^5$ is selected from the group consisting of substituted or unsubstituted alkyl
and substituted or unsubstituted heteroalkyl;

or a salt, hydrate or solvate thereof

wherein the alkyl groups have 10 or fewer carbon atoms and wherein the heteroalkyl
groups include at least one heteroatom selected from the group consisting of B, O,
N and S; and

wherein the substituents for the alkyl and heteroalkyl radicals are each
selected from the group consisting of: $-R', -\text{OR}', =O, =\text{NR}'$, $=\text{N-OR}'$, $-\text{NR}'\text{R}''$, $-\text{SR}'$, $-\text{halogen}$, $-\text{SiR}'\text{R}''\text{R}'''$, $-\text{OC(O)R}', -\text{C(O)R}', -\text{CO}_2\text{R}'$, $-\text{CONR}'\text{R}''$, $-\text{OC(O)NR}'\text{R}''$, $-\text{NR}'\text{C(O)NR}''\text{R}'''$, $-\text{NR}''\text{C(O)NR}'''\text{R}''''$, $-\text{S(O)R}', -\text{S(O)}_2\text{R}', -\text{N}^{(\text{NR})}_2\text{R}'$, $-\text{NR}'\text{R}''\text{R}'''\text{R}''''=\text{NR}''''$, $-\text{NR}''\text{C(NR)R}'''\text{R}''''=\text{NR}''''$, $-\text{CN}$, $-\text{NO}_2$, $-\text{N}_3$, $-\text{CH(Ph)}_2$, fluoro($\text{C}_1-\text{C}_4$)alkoxy, and fluoro($\text{C}_1-\text{C}_4$)alkyl, in a number ranging from
zero to ($2m'$+1), where $m'$ is the total number of carbon atoms in such
radical; wherein $R'$, $R''$, $R'''$, $R''''$ and $R'''''$ are each independently
hydrogen, unsubstituted heteroalkyl, unsubstituted aryl, unsubstituted
alkyl, alkoxy or thiaoalkoxy groups, or arylalkyl groups.
2. The compound as claimed in claim 1, having a structure which is:

\[
\begin{align*}
\text{R}^5 & \quad \text{Y} \\
\text{B} & \quad \text{O} \\
\text{R}^4 & \quad \text{H} \\
\text{C} & \quad \text{R}^3
\end{align*}
\]

wherein \( C^* \) is a carbon atom stereocenter which has a configuration which is (R) or (S).

3. The compound as claimed in claim 1, having a structure which is:

\[
\begin{align*}
\text{R}^5 & \quad \text{Y} \\
\text{B} & \quad \text{O} \\
\text{R}^3 & \quad \text{H} \\
\text{C} & \quad \text{R}^4
\end{align*}
\]

wherein the \( C^* \) is a carbon atom stereocenter which has a configuration which is (R) or (S).

4. The compound as claimed in claim 2, wherein the \( C^* \) stereocenter is in a (S) configuration.

5. The compound as claimed in claim 1, wherein \( R^3 \) is \(-\text{CH}_2\text{NH}_2\).

6. The compound as claimed in claim 1, wherein \( R^4 \) is chlorine or bromine.

7. The compound as claimed in claim 1, wherein \( Y \) is \( \text{O} \).

8. The compound as claimed in claim 1, wherein \( R^5 \) is selected from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, isobutyl, t-butyl, and sec-butyl.

9. The compound as claimed in claim 1, wherein \( R^3 \) is \(-\text{CH}_2\text{NH}_2\); and \( R^4 \) is chlorine.

10. The compound as claimed in claim 1, wherein \( R^3 \) is \(-\text{CH}_2\text{NH}_2\); \( R^4 \) is chlorine; \( Y \) is \( \text{O} \); and \( R^5 \) is substituted or unsubstituted alkyl.
11. A composition comprising:
   a) a first stereoisomer of the compound as claimed in claim 4;
   b) at least one additional stereoisomer of the first stereoisomer;

   wherein the first stereoisomer is present in an enantiomeric excess of at least
   80% relative to said at least one additional stereoisomer.

12. A pharmaceutical formulation comprising:
   a) the compound as claimed in claim 1, or a pharmaceutically acceptable salt
      thereof; and
   b) a pharmaceutically acceptable excipient.

13. The compound as claimed in claim 1, wherein R⁴ is bromine.

14. The compound as claimed in claim 1, wherein R⁴ is selected
    from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, isobutyl, t-butyl,
    and sec-butyl.

15. The compound as claimed in claim 1, wherein R⁴ is methyl.

16. The compound as claimed in claim 1, wherein R⁴ is selected
    from the group consisting of methoxy, ethoxy, propoxy, isopropoxy, butoxy,
    isobutoxy, and sec-butoxy.

17. The compound as claimed in claim 1, wherein R⁴ is methoxy or
    ethoxy.

18. The compound as claimed in claim 1, or a salt, hydrate or
    solvate thereof, wherein R³ is=CH₂NH₂; R⁴ is chlorine; and Y is O.

19. The compound as claimed in claim 1, or a salt, hydrate or
    solvate thereof, wherein R³ is=CH₂NH₂; R⁴ is bromine; and Y is O.

20. The compound as claimed in claim 1, or a salt, hydrate or
    solvate thereof, wherein R³ is=CH₂NH₂; R⁴ is methyl; and Y is O.

21. The compound as claimed in any of the relevant previous
claims, wherein R² is:

\[
R^{12} \begin{pmatrix}
R^{10} \\
R^{11} \\
a
\end{pmatrix}
\]

wherein a is 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; each R¹⁰ and each R¹¹ is independently selected from the group consisting of H, substituted or unsubstituted alkyl, OH and NH₂; R¹² is selected from the group consisting of H, R⁷, halogen, cyano, amidino, OR⁷, NR⁷R⁸, SR⁷, -N(R⁷)S(O)₂R⁸, -C(O)R⁷, -C(O)OR⁷, -C(O)NR⁷R⁸ wherein each R⁷ and each R⁸ is independently selected from the group consisting of H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

preferably, a is 1, 2, 3, 4, or 5;

preferably, a is 2, 3, or 4;

preferably, a is 3;

preferably, each R¹⁰ and each R¹¹ is independently selected from the group consisting of H, substituted or unsubstituted alkyl, OH, and NH₂; preferably, each R¹⁰ and each R¹¹ is H;

preferably R¹² is selected from the group consisting of H, OH, NH₂, methyl, ethyl, -NHS(O)₂CH₃, cyano, -NHC(O)CH₃, -NHC(O)NHCH₂CH₃, -C(O)NH₂, -C(O)OH, 4-(methoxy)phenyl, benzyl, benzoxy, -NHC(O)OCH₂Ph, -C(O)NHCH₂CH₂OH and -C(NH₂)(NH).

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