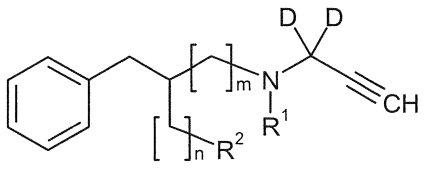
Claims

1. A compound of formula **I**:



I

wherein

D is deuterium;

R^1 is selected from methyl, ethyl, *n*-propyl, *n*-butyl, *iso*-butyl;

R^2 is ~~fluorine,~~ [^{18}F]fluorine or a leaving group, wherein leaving groups are selected from halogen, C_1-C_6-alkylsulfonyloxy, which is optionally substituted by fluorine, and arylsulfonyloxy, which is optionally substituted by hydrogen, methyl, halo and nitro;

n and m are selected from 0 and 1 with the provisos that if n = 0, m must be 1, and if n = 1, m must be 0, and if R^2 is fluorine, n must be 1 and m must be 0;

including all stereoisomeric forms of said compounds, including but not limited to enantiomers and diastereoisomers as well as racemic mixtures, and any suitable salt with an organic or inorganic acid, ester, complex or solvate thereof.

2. A compound according to claim 1,

wherein R^2 is selected from the group consisting of chloro, bromo, methanesulfonyloxy, and *p*-toluenesulfonyloxy.

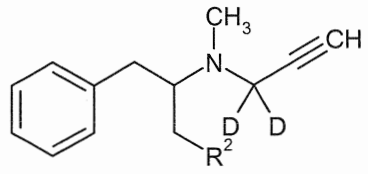
3. A compound according to claim 1 or 2, wherein

D is deuterium;

R^1 is methyl;

R^2 is selected from [^{18}F]fluoro or chloro.

4. A compound of formula **Ia**:



Ia

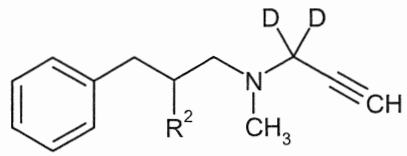
wherein

D is deuterium;

R^2 is selected from [^{18}F]fluoro or chloro;

including enantiomers as well as racemic mixtures, and any suitable salt with an organic or inorganic acid, or solvate thereof.

5. A compound of formula **Ib**:



Ib

wherein

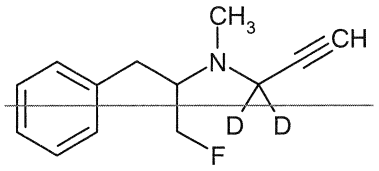
D is deuterium;

R^2 is chloro;

including enantiomers as well as racemic mixtures, and any suitable salt with an organic or inorganic acid, or solvate thereof.

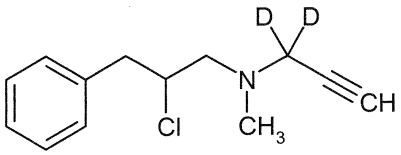
6. A compound selected from the group of compounds consisting of

~~a compound of formula **Ic**,~~



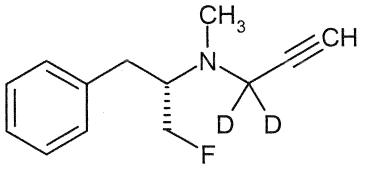
Ic

a compound of formula **Id**,



Id

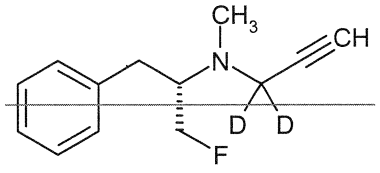
a compound of formula **Ie**,



Ie

wherein F = ^{18}F,

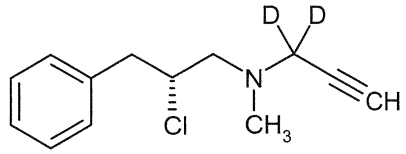
~~a compound of formula **Ie**,~~



Ie

~~wherein F = ^{19}F,~~

a compound of formula **If**,



If

and any suitable salt with an organic or inorganic acid, or solvate thereof.

7. A [^{18}F] labelled compound of any one of claims 1, 3, 4, and 6 as a diagnostic compound for PET imaging.

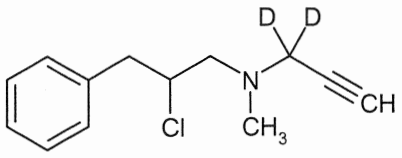
8. A diagnostic composition comprising a [^{18}F] labelled compound of any one of claims 1, 3, 4, and 6 for PET imaging.

9. A [^{18}F] labelled compound of any one of claims 1, 3, 4, and 6 as a diagnostic compound for PET imaging of CNS diseases.

10. A diagnostic composition comprising a [^{18}F] labelled compound of any one of claims 1, 3, 4, and 6 for PET imaging of CNS diseases.

11. A compound or a composition according to any one of claims 7 to 10 for imaging of Alzheimer's disease.

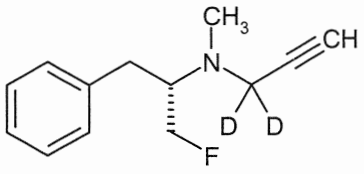
12. A compound or a composition according to any one of claims 7 to 11, wherein the [^{18}F] labelled compound is a compound of formula **Ie**:



Id

is reacted with a suitable F-fluorinating agent, wherein F is ^{18}F.

19. A method according to claim 17 or 18 for the synthesis of a compound of formula **Ie**:



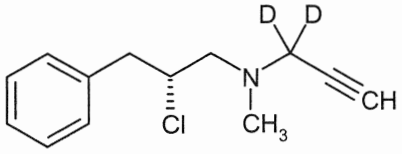
Ie

,

wherein F is ^{18}F,

characterized in that

a compound of formula **If**:



If

is reacted with a suitable F-fluorinating agent, wherein F is ^{18}F.

~~**20.** A kit comprising at least one sealed container comprising a compound or a composition according to claims 1-12.~~

~~**21.** A kit comprising at least one sealed container comprising a compound of claim 6.~~

~~**22.** A kit according to claims 20 and 21 comprising a further sealed container comprising reagents.~~