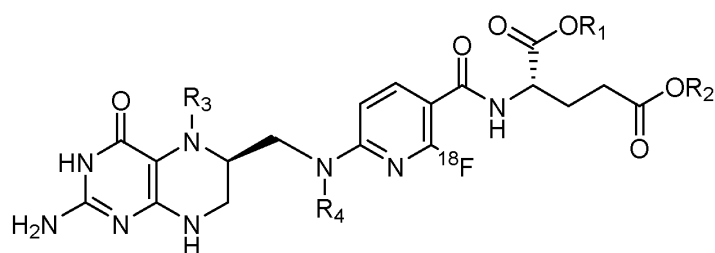
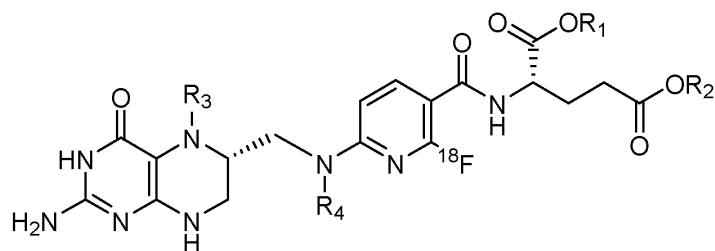


Claims

1. A compound of formula Ia or Ib for use in diagnostic imaging of a cell or population of cells expressing a folate-receptor in vitro or in vivo or for use in monitoring of cancer or inflammatory and autoimmune diseases and therapy thereof



Ia



Ib

wherein

R₁, R₂ are independently of each other H or straight chain or branched C1-C6 alkyl, and

R₃, R₄ are independently of each other H, formyl, or methyl,

or a pharmaceutically acceptable salt thereof.

2. A compound for use according to claim 1 wherein

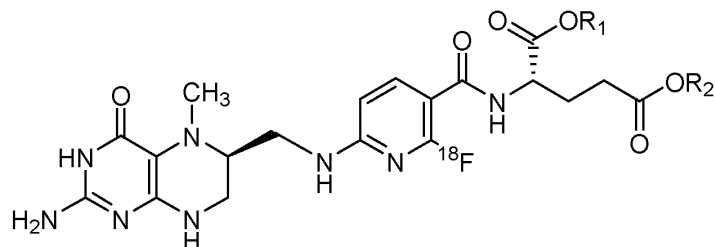
R₁, R₂ are independently of each other H or straight chain or branched C1-C6 alkyl,

R₃ is methyl, and

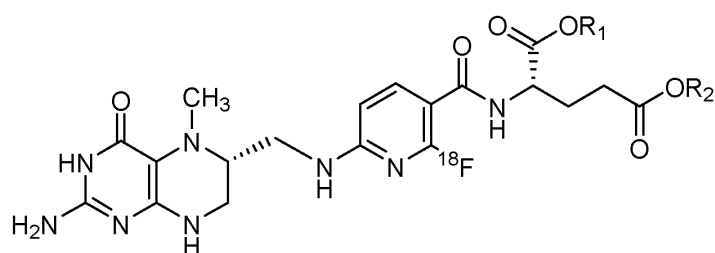
R₄ is H,

or a pharmaceutically acceptable salt thereof.

3. A compound of claim 1 for use according to claim 1 having formulas IIa or IIb



IIa



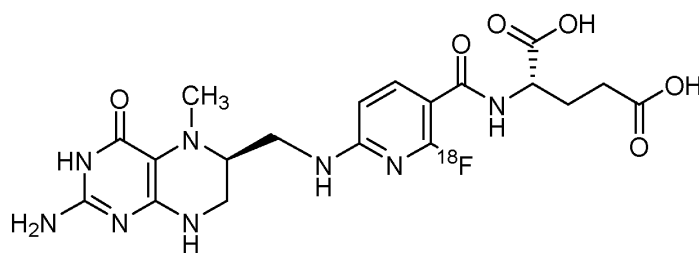
IIb

wherein

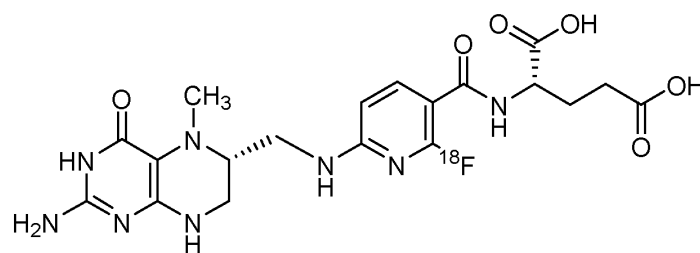
R₁, R₂ are independently of each other H, or C1-C12 alkyl,

or a pharmaceutically acceptable salt thereof.

4. A compound for use according to any preceding claim having formulas IIIa or IIIb



IIIa



IIIb

or a pharmaceutically acceptable salt thereof.

5. A compound for use according to any preceding claim, having a stereoisomeric purity of greater than 99%; preferably having a stereoisomeric purity of greater than 99.5%.
6. A compound for use according to any preceding claim, wherein the pharmaceutically acceptable salts is an alkali or alkaline earth metal salts, preferably a sodium, a potassium, a magnesium or a calcium salt.
7. Method for diagnostic imaging of a cell or population of cells expressing a folate-receptor, said method comprising the steps of administering at least one compound according to claims 1 to 6 in a diagnostic imaging amount, and obtaining a diagnostic image of said cell or population of cells.
8. Method according to claim 7 wherein the diagnostic imaging is performed of a cell or population of cells expressing a folate-receptor in vitro or in vivo.
9. Method according to claim 7 or 8 wherein the diagnostic imaging is performed of human ovarian carcinoma cells.
10. Method for in vitro detection of a cell expressing the folate receptor in a tissue sample which includes contacting said tissue sample with a compound according

to claims 1 to 6 in effective amounts and for sufficient time and conditions to allow binding to occur and detecting such binding by techniques such as autoradiography and the like.

11. Method of diagnostic imaging or monitoring a subject comprising the steps of (i) administering at least one compound according to claims 1 to 6 in a diagnostic imaging amount, and (ii) performing diagnostic imaging using PET by detecting a signal from said at least one compound.
12. Method of monitoring cancer or inflammatory and autoimmune disease therapy in a subject comprising the steps of (i) administering to a subject in need thereof at least one compound according to claims 1 to 6 in a diagnostic imaging amount in combination with a therapeutically active, and (ii) performing diagnostic imaging using PET by detecting a signal from said at least one compound to follow the course of cancer or inflammatory and autoimmune disease therapy.
13. Method of claims 1 to 6 used in combination with any other methods of diagnosis or therapy of cancer or inflammatory and autoimmune disease.