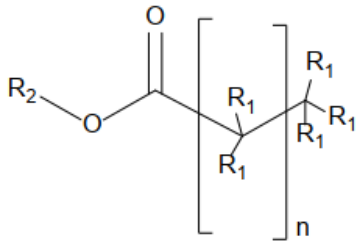
CLAIMS

1. Use of a biocompatible formulation of iodinated fatty acids having 16 to 18 carbon atoms and/or esters thereof according to general formula I:

Formula I



wherein n = 14-16;

R1 is H or I, with the provisions that the number of iodine atoms is 1 to 6, and that the iodine atoms are neither geminal nor vicinal;

and where R2 is H, unsaturated or saturated, linear or branched alkyls, alkyls, alkoxyalkyl, hydroxyalkoxyalkyl, polyhydroxyalkyl, hydroxy poly alkyleneoxyalkyl in the manufacture of a diagnostic peroral contrast agent for *in vivo* imaging with Computed Tomography brown and/or beige adipose tissue (BAT) in a subject.

2. The use according to claim 1, wherein thecontrast agent is adapted for non-invasive *in vivo* imaging, quantification, and/or monitoring of the activity of the brown and/or beige adipose tissue (BAT) in said subject.

3. The use according to any of claims 1-2, wherein the *in vivo* imaging with Computed Tomography is performed by PET-CT imaging.

4. The use according to any of claims 1-3,wherein the biocompatible formulation is an ethiodized oil formulation.

5. The use according to any of claims 1-4,wherein the biocompatible formulation is an emulsion.

6. The use according to any of claim 5, wherein the emulsion is a nano-emulsion.

7. The use according to any of claims 6,wherein the contrast agent consists in a biocompatible nano-emulsion of iodinated fatty acids having 16 to 18 carbon atoms according to general formula I.

8. The use according to any of claims 6-7,wherein the iodinated fatty acid is an iodinated linolenic acid.

9. The use according to any of claims 6-8, wherein the nano-emulsion comprises biocompatible emulsifiers selected amonglecithin, polyethylene glycol ethers with fatty alcohols, polysorbates and sorbitanesters or their mixtures.

10. The use according to claim 9, wherein the amount of said biocompatible emulsifiers in the nano-emulsion is between 5 – 30 %(w/w) of the total nano-emulsion.

11. The use according to any of claims 1-10,wherein the peroral CT contrast agent is to be administrated to said subject at a dose corresponding to between 0.05 and 1.6 mg of iodine per gram of body weight.