**Patent Claims**

1. Medicament containing anhydrous~~Anhydrous~~ polymorph A of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine, characterised in that it melts at 206±3 °C, wherein said medicament contains 0.1% to 0.5%, or 0.5% to 1.5% , or 1% to 3% of anhydrous polymorph A in addition to one or more inert carriers.

2. Medicament~~Polymorph A~~ according to claim 1, wherein polymorph A, characterised in that in the X-ray powder diagram it has *inter alia* characteristic reflexes at the following d values: 11.~~49~~ 59 Å, 7.60 Å, 7.15 Å, 3.86 Å, 3.54 Å and 3.47, is contained.

3. Medicament containing ~~Anhydrous~~ anhydrous polymorph B of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine, characterised in that at a temperature of 10-40°C it transforms reversibly into the polymorph A of claim 1, wherein said medicament contains 0.1% to 0.5%, or 0.5% to 1.5% , or 1% to 3% of anhydrous polymorph B in addition to one or more inert carriers.

4. Medicament~~Polymorph B~~ according to claim 3, wherein polymorph B, characterised in that in the X-ray powder diagram it has *inter alia* characteristic reflexes at the following d values: 11.25 Å, 9.32 Å, 7.46 Å, 6.98 Å and 3.77 Å, is contained.

5. Medicament containing ~~Polymorph~~ polymorph C of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine, characterised in that it loses water at a temperature of 30-100°C and in the DSC diagram it exhibits further thermal effects at approx. 150°C and 175°C, wherein said medicament contains 0.1% to 0.5%, or 0.5% to 1.5% , or 1% to 3% of polymorph C in addition to one or more inert carriers.

6. Medicament~~Polymorph C~~ according to claim 5, wherein polymorph C, characterised in that in the X-ray powder diagram it has *inter alia* characteristic reflexes at the following d values: 12.90 Å, 11.10 Å, 6.44 Å, 3.93 Å and 3.74 Å, is contained.

~~7. Anhydrous polymorph D of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine, characterised in that it melts at 150±3 °C.~~

~~8. Anhydrous polymorph E of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine, characterised in that it melts at 175±3 °C.~~

~~9~~7. Method of preparing the medicament according to claim 5 characterized in that ~~Method of preparing the~~ polymorph C is used, ~~according to claim 5, characterised in that~~ prepared by

(a) 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine is refluxed in methanol,

(b) the methanolic solution is cooled to a temperature of 40-60°C,

(c) a solvent such as tert.-butylmethylether is added,

(d) the resulting suspension is cooled first of all to 15-25°C and then to 0-5°C,

(e) the crystals are suction filtered and

(f) dried *in vacuo* at a temperature of 70°C.

~~10~~8. Method according to claim ~~9~~7, characterised in that after step (a) the hot solution is filtered.

~~11~~9. Use of one of the polymorphs A, B, or C of the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine as defined in claim 1-6 for preparing a ~~pharmaceutical composition~~medicament according to claim 1-6 for the treatment of patients with type I and type II diabetes mellitus, prediabetes or reduced glucose tolerance, rheumatoid arthritis, obesity, or calcitonin-induced osteoporosis, as well as patients in whom an allograft transplant has been carried out.

~~12~~10. Medicament~~s~~ containing the compound 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine in addition to one or more inert carriers and/or diluents, characterised in that it contains 1% to 3% ~~at least 0.1% to 0.5%~~ of one of the polymorphs A, B, or C as defined in any one of claims 1-6 in addition to one or more inert carriers and/or diluents.

11. Medicament according to claim 1 or 2, wherein the X-ray powder diagram of polymorph A is substantially free of the characteristic reflexes of polymorph B according to claim 4.

12. Medicament according to claim 3 or 4, wherein the X-ray powder diagram of polymorph B is substantially free of the characteristic reflexes of polymorph A according to claim 2.

13. Medicament according to claim 1, 2 or 11, wherein polymorph A is characterised by its lattice metrics:

| | |
|---|---|
| Symmetry: | monocline |
| spatial group: | P |
| a: | 16.16(2) Å |
| b: | 17.02(1) Å |
| c: | 18.18(2) Å |
| ß: | 100.95(6) ° |
| cell volume: | 4907(11) $Å^3$ |

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14. Medicament according to claim 3, 4 or 12, wherein polymorph B is characterised by its lattice metrics:

| | |
|---|---|
| Symmetry: | monocline |
| spatial group: | $P2_1/c$ (# 14) |
| a: | 15.23(1) Å |
| b: | 16.94(1) Å |
| c: | 18.79(1) Å |
| ß: | 95.6(2) ° |
| cell volume: | 4823(3) $Å^3$ |

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15. The medicament of claim 1, 2, 11 or 13, wherein the X-ray powder diagram of polymorph A is substantially as shown in Figure 3.

16. The medicament of claim 3, 4, 12 or 14, wherein the X-ray powder diagram of polymorph B is substantially as shown in Figure 4.

17. Method of preparing a medicament according to claim 1, 2, 11, 13 or 15 characterized in that polymorph A is used.

18. Method of preparing a medicament according to claim 3, 4, 12, 14 or 16 characterized in that polymorph B is used.

19. Method of preparing the medicament according to claim 1, 2, 11, 13 or 15 characterized in that polymorph A is used, prepared by

(a) refluxing 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine in absolute ethanol and optionally filtering the mixture,

(b) cooling the hot solution or the hot filtrate until crystallisation sets in,

(c) diluting with a solvent such as tert.-butylmethylether,

(d) suction filtering the solvent mixture and

(e) drying the polymorph A at 45°C *in vacuo*;

or by heating polymorph B or the mixture of polymorphs A and B to temperatures >40°C.

20. Method of preparing the medicament according to claim 3, 4, 12, 14 or 16, characterized in that polymorph B is used, prepared by

(a) dissolving 1-[(4-methyl-quinazolin-2-yl)methyl]-3-methyl-7-(2-butyn-1-yl)-8-(3-(R)-amino-piperidin-1-yl)-xanthine in absolute ethanol and refluxing and optionally filtering the mixture,

(b) cooling the hot solution or the hot filtrate for crystallisation to a temperature below 10°C,

(c) diluting with a solvent such as tert.-butylmethylether,

(d) suction filtering the solvent mixture and

(e) drying the polymorph at a temperature below 10°C *in vacuo*;

or by cooling polymorph A or the mixture of polymorphs A and B to temperatures <10°C.