

CLAIMS

1. A method for identifying an individual with improved response to rosfuroxin, the method comprising detecting in an isolated DNA sample of the individual a single nucleotide polymorphism selected from the group consisting of rs2345088, rs16877182, rs16893522, rs2461911, rs5013093, and rs12513375, in any one of the nucleotide sequences of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 and SEQ ID NO: 11, wherein the presence of the SNP is correlated with an improved response to rosfuroxin in said individual having at least one genotype selected from the group consisting of: genotype TT for rs2345088, heterozygous genotype C/T for rs16877182, genotype AA for rs16893522, genotype AA for rs2461911, genotype TT for rs5013093, and genotype TT for rs12513375.
2. A kit of parts for evaluating rosfuroxin treatment for an individual, the kit comprising: a probe for at least one polymorphism selected from the group consisting of rs2345088, rs16877182, rs16893522, rs2461911, rs5013093, and rs12513375; and a pharmaceutical composition comprising rosfuroxin in a dosage of from 0.005 mg to 5 mg/day and in particular from 0.05 to 0.5 mg/day and a pharmaceutically acceptable vehicle, wherein the probe comprises at least one isolated polynucleotide selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10 and SEQ ID NO: 12 or a fragment thereof, the fragment capable of specifically hybridizing a sequence complementary to SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10 or SEQ ID NO: 12.
3. The kit of parts of claim 2 further comprising a probe for at least one polymorphism selected from the group consisting of rs4961, rs4984, rs10923835, rs947130, rs914247, rs1045642, rs880054, rs10502933, rs2131127, rs4309483, and rs4739037, wherein the probe preferably comprises at least one isolated polynucleotide selected from the group consisting of SEQ ID NO: 26, SEQ ID NO: 28, SEQ ID NO: 30, SEQ ID NO: 32, SEQ ID NO: 34, SEQ ID NO: 36, SEQ ID NO: 38, SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44 and SEQ ID NO: 46 or a fragment thereof, the fragment capable of specifically hybridizing a sequence complementary to SEQ ID NO: 26, SEQ ID NO: 28, SEQ ID NO: 30, SEQ ID NO: 32, SEQ ID NO: 34, SEQ ID NO: 36, SEQ ID NO: 38, SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44 or SEQ ID NO: 46.

4. Use of rostaduroxin for the manufacture of a medicament for the treatment or prevention of hypertension in an individual wherein said individual has been selected to be a carrier of: at least one polymorphism selected from the group consisting of rs2345088, rs16877182, rs16893522, rs2461911, rs5013093, and rs12513375 in any one of the nucleotide sequences of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 and SEQ ID NO: 11; and wherein at least one genotype is selected from the group consisting of: genotype TT for rs2345088, heterozygous genotype C/T for rs16877182, genotype AA for rs16893522, genotype AA for rs2461911, genotype TT for rs5013093, and genotype TT for rs12513375.
5. Use of claim 4, wherein the individual has been additionally selected to be a carrier of a polymorphism in at least one CAND 1 gene selected from the group consisting of ADD1, ADD2, ADD3, LSS, MDR1, HSD3B1, CYP11A1 and SLC04C1, CAND 2 gene selected from the group consisting of ACTN 1, ADRA1A, AGTR1, AQP2, ATP1A3, CLCNKA, CLCNKB, FXYD2, FXYD6, FYN, NEDD4L, NKAIN3, PKD1, PKD2, SCNN1 B, SGK1, SLC12A1, SLC8A1, TJP1, UMOD, and WNK1 and/or GWS gene selected from the group consisting of ARL5A, ATP2A3, COX10, DPH5, FAIM3, FAM46A, HCG9, HLA-A, HLA-F, HLA-G, KCNS3, LOC131691, LOC389174, LOC389970, LOC642727, LOC644192, LOC649458, LOC728360, LOC728316, PIGR, RCADH5, RP3-377H14.5, SH3PXD2A, SLC30A7, THSD7A, TMEM200A, TRIM31, TTC29, and VCAM1.
6. Use of claim 5, wherein the individual has been additionally selected to be a carrier also of at least one polymorphism in at least one gene selected from the group consisting of ADD1, ADD2, ADD3, CYP11A1, HSD3B1, LSS, ABCB/MDR1, and SLC04C1.
7. Use of any one of claims 4 to 6, wherein the individual has been additionally selected to be a carrier of at least one single nucleotide polymorphisms selected from the group consisting of rs4961, rs4984, rs3731566, rs914247, and rs1045642.
8. Use of any one of claims 4 to 7, wherein the individual has been additionally selected to be a carrier of genotype AA for rs914247.
9. Use of any one of claims 4 to 8, wherein the individual has been additionally selected to be a carrier of at least one single nucleotide polymorphism selected from the group consisting of rs242093, rs1996396, rs10503806, rs13251780, rs17430706, rs10102024, rs526302, rs544104, rs3102087, rs5183, rs3772627, rs2276736, rs2131127, rs3741559,

rs2217342, rs10927888, rs6604909, rs945403, rs7117314, rs10790212, rs11216598, rs910682, rs13218316, rs4309483, rs13280307, rs4739037, rs17596774, rs2728108, rs17786456, rs7696304, rs2725222, rs17199565, rs2758152, rs1057293, rs16960712, rs759359, rs404214, rs1005213, rs17025453, rs2110923, rs1428571, rs435404, rs12908787, rs11647727, rs880054, and rs11064584.

10. Use of any one of claims 4 to 9, wherein the individual has been additionally selected to be a carrier of at least one single nucleotide polymorphism selected from the group consisting of rs12996186, rs9893372, rs7216331, rs7521668, rs188334, rs4998662, rs16893522, rs6457110, rs3893464, rs2517718, rs1362126, rs5013093, rs2345088, rs6718282, rs721207, rs2555500, rs2461911, rs8179654, rs1901139, rs2427832, rs9361863, rs1998394, ga001619, rs2275531, rs748140, rs4710592, rs2743951, rs10159569, rs3087816, rs10493940, rs16877182, rs2326912, rs1110446, rs12513375, and rs17414954.

11. Use of any one of claims 4 to 10, , wherein the individual has been additionally selected to a carrier of at least one single nucleotide polymorphism selected from the group consisting of rs4961, rs4984, rs10923835, rs947130, rs914247, rs1045642, rs880054, rs10502933, rs2131127, rs4309483, and rs4739037.

12. Use of any one of claims 4 to 10, wherein the individual has been additionally selected to be a carrier of at least one single nucleotide polymorphism selected from the group consisting of rs1045642, rs10923835, rs914247, rs4961, rs947130, rs4309483, rs2131127, rs10502933, and rs880054 (profile 8).

13. Use of any one of claims 1 to 7, wherein the individual has been additionally selected to be a carrier of at least one single nucleotide polymorphism selected from the group consisting of rs1045642, rs10923835, rs914247, rs947130, rs4739037, rs43909483, rs4984, rs10502933 and rs880054 (profile 9).

14. The use of claim 4, wherein the rostafuxin is in a dosage of from 0.005 mg/day to 5 mg/day.

15. The use according to claim 14, wherein the individual has been additionally selected to be a carrier also of a polymorphism in at least one: CAND 1 gene, selected from the group consisting of ADD1, ADD2, ADD3, LSS, MDR1, HSD3B1, CYP11A1 and SLC04C1; CAND 2 gene selected from the group consisting of ACTN 1, ADRA1A, AGTR1, AQP2, ATP1A3,

CLCNKA, CLCNKB, FXYD2, FXYD6, FYN, NEDD4L, NKAIN3, PKD1, PKD2, SCNN1 B, SGK1, SLC12A1, SLC8A1, TJP1, UMOD, and WNK1; and/or GWS gene selected from the group consisting of ARL5A, ATP2A3, COX10, DPH5, FAIM3, FAM46A, HCG9, HLA-A, HLA-F, HLA-G, KCNS3, LOC1 31691, LOC389174, LOC389970, LOC642727, LOC644192, LOC649458, LOC728360, LOC728316, PIGR, RCADH5, RP3-377H14.5, SH3PXD2A, SLC30A7, THSD7A, TMEM200A, TRIM31, TTC29, and VCAM1, and wherein the rostafuroxin to be administered or prescribed to the individual results in an average decrease ranging from about 8 to about 22.5 mmHg.

16. The use of claim 15, wherein the at least one CAND 1 gene, CAND 2 gene and GWS gene is selected from the group consisting of MDSR 2, HSD18, LSS2, HSD19, ADD2, WNK, wherein the polymorphism in at least one CAND 1 gene, CAND 2 gene and/or GWS gene is preferably a single nucleotide polymorphism.