

TLRs signaling pathway genes polymorphisms and bladder cancer risk

Table S1. Candidate genes in the SNPs selection flow

| Gene Full Name | Gene ID |
|---|---------|
| similar to calmodulin 3 (phosphorylase kinase, delta) (H. sapiens) | 147908 |
| similar to calmodulin 2 | 124827 |
| cytochrome c, somatic pseudogene 35 | 121916 |
| toll-interleukin 1 receptor (TIR) domain containing adaptor protein | 114609 |
| toll-like receptor 10 | 81793 |
| toll interacting protein | 54472 |
| toll-like receptor 9 | 54106 |
| ECSIT homolog (Drosophila) | 51295 |
| toll-like receptor 7 | 51284 |
| lymphocyte antigen 96 | 23643 |
| mitogen-activated protein kinase kinase kinase 7 interacting protein 2 | 23118 |
| mitogen-activated protein kinase kinase kinase 7 interacting protein 1 | 10454 |
| toll-like receptor 6 | 10333 |
| ribosomal protein S6 kinase, 90kDa, polypeptide 5 | 9252 |
| mitogen-activated protein kinase kinase kinase 14 | 9020 |
| peptidoglycan recognition protein 1 | 8993 |
| Fas (TNFRSF6) -associated via death domain | 8772 |
| receptor (TNFRSF) -interacting serine-threonine kinase 1 | 8737 |
| TNFRSF1A-associated via death domain | 8717 |
| MAP kinase interacting serine/threonine kinase 1 | 8569 |
| inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma | 8517 |
| TNF receptor-associated factor 6 | 7189 |
| tumor necrosis factor receptor superfamily, member 1B | 7133 |
| tumor necrosis factor receptor superfamily, member 1A | 7132 |
| tumor necrosis factor, alpha-induced protein 3 | 7128 |
| tumor necrosis factor (TNF superfamily, member 2) | 7124 |
| toll-like receptor 4 | 7099 |
| toll-like receptor 3 | 7098 |
| toll-like receptor 2 | 7097 |
| mitogen-activated protein kinase kinase kinase 7 | 6885 |
| signal transducer and activator of transcription 3 (acute-phase response factor) | 6774 |
| v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian) | 6714 |
| son of sevenless homolog 1 (Drosophila) | 6654 |
| SHC (Src homology 2 domain containing) transforming protein 1 | 6464 |
| mitogen-activated protein kinase kinase 4 | 6416 |
| ribosomal protein S6 kinase, 90kDa, polypeptide 4 | 6195 |
| v-rel reticuloendotheliosis viral oncogene homolog A, nuclear factor of kappa light | 5970 |
| polypeptide gene enhancer in B-cells 3, p65 (avian) | |
| v-raf-1 murine leukemia viral oncogene homolog 1 | 5894 |
| protein tyrosine phosphatase, receptor type, R | 5801 |
| eukaryotic translation initiation factor 2-alpha kinase 2 | 5610 |
| mitogen-activated protein kinase kinase 6 | 5608 |
| mitogen-activated protein kinase kinase 3 | 5606 |
| mitogen-activated protein kinase kinase 2 | 5605 |
| mitogen-activated protein kinase kinase 1 | 5604 |
| mitogen-activated protein kinase 8 | 5599 |
| mitogen-activated protein kinase 3 | 5595 |

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| mitogen-activated protein kinase 1 | 5594 |
| protein kinase C, beta 1 | 5579 |
| protein kinase C, alpha | 5578 |
| protein kinase, cAMP-dependent, regulatory, type II, beta | 5577 |
| protein kinase, cAMP-dependent, regulatory, type II, alpha | 5576 |
| protein kinase, cAMP-dependent, regulatory, type I, beta | 5575 |
| protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1) | 5573 |
| protein kinase, cAMP-dependent, catalytic, gamma | 5568 |
| protein kinase, cAMP-dependent, catalytic, beta | 5567 |
| protein phosphatase 3 (formerly 2B), catalytic subunit, gamma isoform | 5533 |
| protein phosphatase 3 (formerly 2B), catalytic subunit, beta isoform | 5532 |
| protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform | 5530 |
| protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform | 5515 |
| peroxisome proliferator-activated receptor alpha | 5465 |
| platelet-derived growth factor receptor, alpha polypeptide | 5156 |
| nitric oxide synthase 1 (neuronal) | 4842 |
| nerve growth factor receptor (TNFR superfamily, member 16) | 4804 |
| nerve growth factor, beta polypeptide | 4803 |
| nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha | 4792 |
| nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105) | 4790 |
| myeloid differentiation primary response gene (88) | 4615 |
| v-myc myelocytomatosis viral oncogene homolog (avian) | 4609 |
| mitogen-activated protein kinase kinase 1 | 4214 |
| jun oncogene | 3725 |
| integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) | 3688 |
| interleukin-1 receptor-associated kinase 1 | 3654 |
| interleukin 1 receptor, type I | 3554 |
| interleukin 1, alpha | 3552 |
| inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta | 3551 |
| inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta | 3551 |
| insulin-like growth factor 1 receptor | 3480 |
| v-Ha-ras Harvey rat sarcoma viral oncogene homolog | 3265 |
| glutamate receptor, ionotropic, N-methyl D-aspartate 2D | 2906 |
| glutamate receptor, ionotropic, N-methyl D-aspartate 2C | 2905 |
| glutamate receptor, ionotropic, N-methyl D-aspartate 2B | 2904 |
| glutamate receptor, ionotropic, N-methyl D-aspartate 2A | 2903 |
| glutamate receptor, ionotropic, N-methyl D-aspartate 1 | 2902 |
| growth factor receptor-bound protein 2 | 2885 |
| MAP kinase interacting serine/threonine kinase 2 | 2872 |
| guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 1 | 2792 |
| guanine nucleotide binding protein (G protein), beta polypeptide 1 | 2782 |
| GNAS complex locus | 2778 |
| v-fos FBJ murine osteosarcoma viral oncogene homolog | 2353 |
| ELK1, member of ETS oncogene family | 2002 |
| ELK1, member of ETS oncogene family | 2002 |
| epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian) | 1956 |
| discs, large homolog 4 (Drosophila) | 1742 |
| mitogen-activated protein kinase 14 | 1432 |
| conserved helix-loop-helix ubiquitous kinase | 1147 |

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| CD14 molecule | 929 |
| calmodulin 3 (phosphorylase kinase, delta) | 808 |
| calmodulin 2 (phosphorylase kinase, delta) | 805 |
| calmodulin 1 (phosphorylase kinase, delta) | 801 |

Table S2. MiRNAs associated with TLRs signaling pathway genes

| | | |
|-------------|-------------|------------|
| miR-939 | miR-520a-5p | miR-202 |
| miR-920 | miR-519-e | miR-194 |
| miR-768 | miR-515-5p | miR-19 |
| miR-653 | miR-509-3p | miR-186 |
| miR-646 | miR-505 | miR-185 |
| miR-644 | miR-499b | miR-185-5p |
| miR-635 | miR-499a | miR-181d |
| miR-633b | miR-491-5p | miR-181c |
| miR-632 | miR-483-3p | miR-181b |
| miR-626 | miR-455-3p | miR-181a |
| miR-626 | miR-452 | miR-147 |
| miR-608 | miR-433 | miR-145 |
| miR-607 | miR-381 | miR-143 |
| miR-593 | miR-370 | miR-138 |
| miR-587 | miR-37 | miR-138 |
| miR-584d-5p | miR-34a | miR-1323 |
| miR-584c-5p | miR-342-3p | miR-130b |
| miR-584b-5p | miR-340 | miR-1298 |
| miR-584a-5p | miR-340 | miR-1297 |
| miR-559 | miR-30b | miR-1294 |
| miR-548f | miR-302d | miR-1288 |
| miR-548e | miR-302C | miR-1274a |
| miR-548b-3p | miR-302b | miR-1271 |
| miR-548-3p | miR-300 | miR-1256 |
| miR-548 | miR-297 | miR-1237 |
| miR-548 | miR-297 | miR-1228 |
| miR-541 | miR-26b | miR-1201 |
| miR-539 | miR-26a | miR-615-5p |
| miR-520q | miR-207-3p | let-7f-2 |
| miR-520h | miR-205 | let-7b |

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Table S3. Candidate SNPs in the SNPs selection flow

| Gene | SNP | Chromosome | Position | Major/Minor Allele | Putative microRNAs |
|--------|-------------|------------|-----------|--------------------|---|
| CD14 | rs3776138 | 5 | 140011321 | C/G | hsa-miR-302b, hsa-miR-302d |
| IRAK1 | rs11556423 | X | 152929358 | G/T | hsa-miR-587 |
| IRAK1 | rs3027901 | X | 153277280 | A/G | hsa-miR-488-5p |
| MAP3K7 | rs2131906 | 6 | 91282763 | A/G | hsa-miR-297, hsa-miR-548e, hsa-miR-548f |
| MAP3K7 | rs9451441 | 6 | 91282764 | A/T | hsa-miR-297 |
| MAP3K7 | rs3734657 | 6 | 91282929 | C/T | hsa-miR-194, hsa-miR-212, hsa-miR-132 |
| MAP3K7 | rs34631230 | 6 | 91226286 | C/T | hsa-miR-138 |
| MAPK1 | rs3810611 | 22 | 22115553 | A/G | hsa-miR-138-5p |
| MAPK1 | rs58437134 | 22 | 22117065 | A/G | hsa-miR-5581-3p |
| MAPK1 | rs61757989 | 22 | 22112868 | G/A | hsa-miR-632 |
| MAPK1 | rs2276008 | 22 | 21759747 | C/G | hsa-miR-300, hsa-miR-381-3p, hsa-miR-624-3p |
| MAPK1 | rs2276007 | 22 | 21759742 | C/T | hsa-miR-300 |
| MAPK1 | rs1803546 | 22 | 21764121 | G/T | hsa-miR-1323 |
| MAPK1 | rs1048752 | 22 | 21764144 | A/G | hsa-miR-520h |
| MAPK14 | rs1803337 | 6 | 36185978 | C/T | hsa-miR-539 |
| MAPK14 | rs8510 | 6 | 36186158 | C/T | hsa-miR-541 |
| MAPK14 | rs1803334 | 6 | 36109525 | C/T | hsa-miR-6758-5p, hsa-miR-6856-5p |
| MAPK3 | rs11865228 | 16 | 30033161 | G/T | hsa-miR-143 |
| MAPK3 | rs3751867 | 16 | 30033353 | G/A | hsa-miR-491-5p |
| MAPK3 | rs113204102 | 16 | 30128114 | G/C | hsa-miR-608 |
| MAPK3 | rs1062543 | 16 | 30114441 | C/T | hsa-miR-520a-5p, hsa-miR-1323 |
| MAPK3 | rs41280866 | 16 | 30114549 | A/G | hsa-miR-491-5p, hsa-miR-185-5p |
| MAPK3 | rs41280860 | 16 | 30114536 | A/G | hsa-miR-491-5p, hsa-miR-185-5p |
| MAPK3 | rs41280864 | 16 | 30114548 | A/G | hsa-miR-491-5p |
| MYD88 | rs6853 | 3 | 38184370 | G/A | hsa-miR-143 |
| TAB2 | rs35859918 | 6 | 149731659 | C/A | hsa-miR-124-3p, hsa-miR-3714, hsa-miR-506-3p |
| TAB2 | rs34532338 | 6 | 149731141 | A/C | hsa-miR-302c |
| TLR4 | rs1057313 | 9 | 119517680 | G/T | hsa-miR-202 |
| TLR4 | rs7869402 | 9 | 120478032 | C/T | hsa-miR-539 |
| TLR6 | rs5743823 | 4 | 38828649 | T/C | hsa-miR-452 |
| TLR6 | rs5743829 | 4 | 38827455 | C/T | hsa-miR-4436b-3p |
| TLR7 | rs10127190 | X | 12816916 | T/A | hsa-miR-19a, hsa-miR-19b |
| TLR7 | rs5743786 | X | 12817917 | T/C | hsa-miR-548a-3p, hsa-miR-548e, hsa-miR-548f |
| TLR7 | rs80280330 | X | 12907534 | A/C | hsa-miR-147 |
| TLR7 | rs72552316 | X | 12889591 | C/T | hsa-miR-1265, hsa-miR-4764-5p, hsa-miR-541-5p |
| TNF | rs3093667 | 6 | 31653746 | G/T | hsa-miR-570 |
| TNF | rs3093666 | 6 | 31545733 | C/T | hsa-miR-4721, hsa-miR-4446-3p |
| TNF | rs28501663 | 6 | 31545828 | G/T | hsa-miR-150-5p |
| TOLLIP | rs41314515 | 11 | 1298137 | C/A | hsa-miR-608 |
| TRAF6 | rs5030486 | 11 | 36509146 | A/G | hsa-miR-138-5p |
| TRAF6 | rs11033658 | 11 | 36509510 | C/T | hsa-miR-130b |
| TRAF6 | rs56289909 | 11 | 36511067 | C/T | hsa-miR-1237 |