

Supplementary material

List of analyzed genes in the liver

| Symbol | Description |
|-----------|--|
| Hk1 | Hexokinase 1 |
| Nfil3 | Nuclear factor, interleukin 3 regulated |
| Acsl1 | Acyl-CoA synthetase long-chain family member 1 |
| Pfkip | Phosphofructokinase, platelet |
| Dsp | Desmoplakin |
| Akt1 | V-akt murine thymoma viral oncogene homolog 1 |
| Atm | Ataxia telangiectasia mutated homolog (human) |
| Id4 | Inhibitor of DNA binding 4 |
| Hp | Haptoglobin |
| Pde1alpha | Phosphodiesterase 1A, calmodulin-dependent |
| 18SrRNA | Rat 18S rRNA sequence |
| Pgk1 | Phosphoglycerate kinase 1 |
| Actb | Actin, beta |

Table S1 shows symbol and description of the analyzed genes in the liver

List of analyzed genes in the testicle

| Symbol | Description |
|--------|--|
| Abl1 | C-abl oncogene 1, receptor tyrosine kinase |
| Apex1 | APEX nuclease (multifunctional DNA repair enzyme) |
| Atm | Ataxia telangiectasia mutated homolog (human) |
| Atrx | Alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog <i>S. cerevisiae</i>) |
| Bard1 | BRCA1 associated RING domain 1 |
| Bax | Bcl2-associated X protein |

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|---------|---|
| Bbc3 | Bcl-2 binding component 3 |
| Blm | Bloom syndrome, RecQ helicase-like |
| Brca1 | Breast cancer 1 |
| Brca2 | Breast cancer 2 |
| Cdc25a | Cell division cycle 25 homolog A (S. pombe) |
| Cdc25c | Cell division cycle 25 homolog C (S. pombe) |
| Cdkn1a | Cyclin-dependent kinase inhibitor 1A |
| Check1 | CHK1 checkpoint homolog (S. pombe) |
| Check2 | CHK2 checkpoint homolog (S. pombe) |
| Csnk2a2 | Casein kinase 2, alpha prime polypeptide |
| Dclre1a | DNA cross-link repair 1A, PSO2 homolog (S. cerevisiae) |
| Ddb2 | Damage specific DNA binding protein 2 |
| Ddit3 | DNA-damage inducible transcript 3 |
| Ercc1 | Excision repair cross-complementing rodent repair deficiency, complementation group 1 |
| Ercc2 | Excision repair cross-complementing rodent repair deficiency, complementation group 2 |
| Exo1 | Exonuclease 1 |
| Fanca | Fanconi anemia, complementation group A |
| Fancc | Fanconi anemia, complementation group C |
| Fancd2 | Fanconi anemia, complementation group D2 |
| Fancg | Fanconi anemia, complementation group G |
| Fen1 | Flap structure-specific endonuclease 1 |
| Gadd45a | Growth arrest and DNA-damage-inducible, alpha |
| Gadd45g | Growth arrest and Dna-damage-inducible, gamma |
| Hus1 | HUS1 checkpoint homolog (S. pombe) |
| Lig1 | Ligase I, DNA, ATP-dependent |

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|----------|---|
| Mbd4 | Methyl-CpG binding domain protein 4 |
| Mgmt | O-6-methylguanine-DNA methyltransferase |
| Mif | Macrophage migration inhibitory factor |
| Mlh1 | MutL homolog 1 (E. coli) |
| Mlh3 | MutL homolog 3 (E. coli) |
| Mpg | N-methylpurine-DNA glycosylase |
| Mre11a | MRE11 meiotic recombination 11 homolog A (S. cerevisiae) |
| Msh2 | MutS homolog 2 (E. coli) |
| Msh3 | MutS homolog 3 (E. coli) |
| Nbn | Nibirin |
| Nth1 | Nth (endonuclease III)-like 1 (E. coli) |
| Ogg1 | 8-oxoguanine DNA glycosylase |
| Parp1 | Poly (ADP-ribose) polymerase 1 |
| Parp2 | Poly (ADP-ribose) polymerase 2 |
| Pcna | Proliferating cell nuclear antigen |
| Pms1 | Postmeiotic segregation increased 1 (S. cerevisiae) |
| Pms2 | PMS2 postmeiotic segregation increased 2 (S. cerevisiae) |
| Pold3 | Polymerase (DNA-directed), delta 3, accessory subunit |
| Pole | Polymerase (DNA directed), epsilon |
| Polh | Polymerase (DNA directed), eta |
| Poli | Polymerase (DNA directed), iota |
| Ppm1d | Protein phosphatase 1D magnesium-dependent, delta isoform |
| Ppp1r15a | Protein phosphatase 1, regulatory (inhibitor) subunit 15A |
| Prkdc | Protein kinase, DNA activated, catalytic polypeptide |
| Pttg1 | Pituitary tumor-transforming 1 |

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|---------|---|
| Rad1 | RAD1 homolog (S. pombe) |
| Rad17 | RAD17 homolog (S. pombe) |
| Rad18 | RAD18 homolog (S. cerevisiae) |
| Rad21 | RAD21 homolog (S. pombe) |
| Rad50 | RAD50 homolog (S. cerevisiae) |
| Rad51 | RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae) |
| Rad51c | RAD51 homolog c (S. cerevisiae) |
| Rad51b | RAD51 paralog b |
| Rad52 | RAD52 homolog (S. cerevisiae) |
| Rad9 | RAD9 homolog (S. pombe) |
| Rev1 | REV1 homolog (S. cerevisiae) |
| Rnf8 | Ring finger protein 8 |
| Rpa1 | Replication protein A1 |
| Sirt1 | Sirtuin (silent mating type information regulation 2 homolog) 1 (S. cerevisiae) |
| Smc1a | Structural maintenance of chromosome 1A |
| Smc3 | Structural maintenance of chromosome 3 |
| Sumo1 | SMT3 suppressor of mif two 3 homolog 1 (S. cerevisiae) |
| Terf1 | Telomeric repeat binding factor (NIMA-interacting)1 |
| Topbp1 | Topoisomerase (DNA) II binding protein 1 |
| Tp53 | Tumor protein 53 |
| Tp53bp1 | Tumor protein p53 binding protein 1 |
| Ung | Uracil-DNA glycosylase |
| Wrn | Werner syndrome |
| Wrnip1 | Werner helicase interacting protein 1 |
| Xpc | Xeroderma pigmentosum, complementation group C |

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| Xrcc1 | X-ray repair complementing defective repair in Chinese hamster cells 1 |
| Xrcc2 | X-ray repair complementing defective repair in Chinese hamster cells 2 |
| Xrcc6 | X-ray repair complementing defective repair in Chinese hamster cells 6 |

Table S2 shows symbol and description of the **analyzed genes in the testicle**

P-value for all the genes analyzed in the testicle

| Gene Symbol | Fold Regulation | p-value |
|-------------|-----------------|-------------------|
| Abl1 | -1,54 | 0,143347795 5 |
| Apex1 | -1,59 | 0,151726647 6 |
| Atm | -1,66 | 0,198130388 |
| Atrx | -1,76 | 0,079080803 64 |
| Bax | -2,02 | 0,100847531 3 |
| Bbc3 | -5,49 | 0,011589042 08 |
| Blm | -1,85 | 0,085064475 35 |
| Brca1 | -1,75 | 0,150153595 4 |
| Brca2 | -1,55 | 0,308506315 |
| Cdc25a | -1,67 | 0,068921061 06 |
| Cdc25c | -1,75 | 0,076802933 94 |
| Cdkn1a | -2,07 | 0,050389420 37 |
| Chek2 | -2,35 | 0,065205141 99 |
| Ddb2 | -1,72 | 0,169318727 6 |
| Ddit3 | -1,79 | 0,157855559 3 |

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|---------|-------|--------------------|
| Ercc2 | -1,61 | 0,304819835 5 |
| Exo1 | -1,58 | 0,169331591 5 |
| Fancc | -1,91 | 0,218952361 9 |
| Fancd2 | -1,52 | 0,235667183 2 |
| Fancg | -1,58 | 0,044551593 |
| Fen1 | -1,57 | 0,262962991 6 |
| Gadd45g | -2,62 | 0,057978706 6 |
| Lig1 | -1,94 | 0,099871361 95 |
| Mbd4 | -1,79 | 0,044873915 44 |
| Mgmt | -1,84 | 0,039260375 1 |
| Mif | -1,76 | 0,155479245 7 |
| Mlh1 | -2,11 | 0,110737442 8 |
| Mlh3 | -1,93 | 0,070064983 75 |
| Mpg | -1,85 | 0,226063912 9 |
| Ogg1 | -1,61 | 0,18214759 |
| Pcna | -1,74 | 0,022247833 31 |
| Pms1 | -1,73 | 0,162582667 7 |
| Pole | -1,67 | 0,162786507 8 |
| Polh | -1,81 | 0,118083861 5 |
| Ppm1d | -1,67 | 0,003227466 353 |
| Pttg1 | -1,75 | 0,158936494 3 |

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|---------|-------|-------------------|
| Rad1 | -1,53 | 0,129766861 3 |
| Rad17 | -1,6 | 0,332052841 2 |
| Rad18 | -1,66 | 0,028701441 61 |
| Rad51 | -1,69 | 0,250399989 6 |
| Rad52 | -1,53 | 0,220790690 5 |
| Rad9 | -1,72 | 0,134382498 1 |
| Rev1 | -1,64 | 0,161923206 |
| Rnf8 | -1,63 | 0,455249258 7 |
| Sirt1 | -1,66 | 0,165877474 3 |
| Smc3 | -1,74 | 0,059192267 38 |
| Ung | -1,77 | 0,156993114 |
| Wrn | -1,56 | 0,080142782 5 |
| Xrcc1 | -1,6 | 0,146863589 8 |
| Xrcc2 | -1,52 | 0,216963084 2 |
| Xrcc6 | -1,71 | 0,112869336 1 |
| Check1 | -1,24 | 0,39552 |
| Csnk2a2 | -1,21 | 0,783206 |
| Dclre1a | -1,31 | 0.608092 |
| Ercc1 | -1,4 | 0.377563 |
| Fanca | -1,24 | 0.620050 |
| Gadd45a | -1,43 | 0.253278 |
| Hus1 | -1,3 | 0.593755 |
| Mre11a | -1,45 | 0.182590 |
| Msh2 | 1,07 | 0.724642 |
| Msh3 | -1,24 | 0.358648 |

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| Nbn | 1,23 | 0.506336 |
| Nthl1 | -1,35 | 0.481611 |
| Parp1 | -1,44 | 0.363357 |
| Parp2 | -1,34 | 0.246076 |
| Pms2 | -1,32 | 0.390605 |
| Pold3 | -1,36 | 0.166457 |
| Poli | -1,33 | 0.501038 |
| Ppp1r15a | -1,26 | 0.623647 |
| Prkdc | -1,42 | 0.304382 |
| Rad21 | -1,23 | 0.746137 |
| Rad50 | -1,42 | 0.393958 |
| Rad51c | -1,16 | 0.901608 |
| Rad51b | -1,22 | 0.567819 |
| Rpa1 | -1,38 | 0.245941 |
| Smc1a | -1,39 | 0.604607 |
| Sumo1 | 1,08 | 0.756822 |
| Terf1 | -1,41 | 0.209488 |
| Topbp1 | -1,17 | 0.481340 |
| Tp53 | -1,05 | 0.995145 |
| Tp53bp1 | -1,49 | 0.366596 |
| Wrnip1 | -1,33 | 0.488990 |
| Xpc | -1,26 | 0.720942 |

Table S3 shows the fold regulation and p value for all the genes analyzed in the testicle.