

ORIGINAL RESEARCH ARTICLE

The preventive and protective effects of aspirin on radiation-induced skin injury

Supplementary File

Table S1. Differentially expressed genes (DEGs) in irradiated group as compared to control group

Pattern	Gene names
Upregulated genes	<i>S100a8, S100a9, Stfa3, Cstcd5, Fabp5, Krt6b, Krt6a, Stfa1, Il17a, Sprr1b, Krt16, Sprr2d, Il17f, Srgn, 2610528A11Rik, Cxcl2, Cxcl3, Cxd5, Ccdc71l, Emb, Cxcr6, Sprr2f, Gapdh, Aqp3, Sprr2a3, Ifi2712a, Ppif, Icos, Serpinb3a, Bcl2a1b, Krt1, Sprr2h, Odc1, Sprr2i, F3, Txn1, Crct1, Ndufa4, Fam162a, Rgs1, Pgk1, Sprr2e, Slpi, Slnf2, Ehf, Cytip, Krt14, Gjb2, Ctla4, Pkm, Ctsc, Areg, Lcn2, Cotl1, Ly6e, Cnfn, Coro1a, Gsta4, Dgat1, Ass1, Traf1, Cyba, Cd53, Sprr2b, Il7r, Trbc2, Csta1, Basp1, Laptm5, Atp5mpl, Smox, Ldha, Gmfg, Fxyd5, Serpinb1a, Sprr2k, Ostf1, Glrx, Hif1a, Sat1, Sprr2j-ps, Pgam1, Rpl41, Cxcl1, Phlda1, Csta3, Blmh, Ramp3, Rbm3, Crem, Igfbp2, Aldoa, Furin, Lgmn, Rac2, Rbp2, Rbp1, Cd3g, Gk, Chchd10, Cd3d, Capg, Npc2, Gsto1, Tspan3, Sh3bgrl3, Atp1a1, Eglm3, Cd24a, Cstb, Cxcr4, Slc6a14, Bst2, Lat, Marcks, Hspe1, Arhgdib, Gpi1, Samsn1, Pfn1, Nrg1, Npm1, Tmem176a, Ccl8, Slc4a7, Hspd1, Isg15, Cttd, Cd44, Cpe, Stom, Cenpa, Ucp2, AW112010, Nppb, Slc7a11, Lmnb1, Resf1, Arpc1b, Hcst, Cstcd6, Hs3st1, Enah, Tpi1, Serpinb3b, Fhl2, Nme1, Lcp1, Anmccr1, Nijj1, Pxcd1, Cox5a, Rpl37, Endou, Ptpn18, Uqcrq, Stk17b, Ppp1cc, Cox6b1, Fth1, Vmp1, Eno1, Capn2, Hilpda, Snrpg, Lsp1, H2-Aa, Uqcr10, Cox5b, Ctsb, Lgals1, Id2, Glo1, Ets1, Atp5o, Tspo, Ptpcr, Prelid1, Slc25a3, Tommm6, Smim3, Ifitm3, Mxd1, Il2rb, Irf7, Bcl2l15, Sec61b, Defb6, Myl12b, Il24, Ubald2, Sprr1a, Prdm1, Il1rn, Snrpf, S100a6, Cxcl10, Procr, Arpc3, Fyb, Sec61g, Shisa5, Mapk6, Tnc, Cd74, Tmsb10, Slc15a3, Prxl2a, Nap1l1, Zeb2, Cmpk1, Rgs2, Tgfb1, Stx11, Tpm2, Elf3, Eif4ebp1, Akap13, Ide, Pmaip1, Cox8a, Abracl, Slc2a1, Dusp5, Snrpe, Car12, Asprv1, Tmem176b, Tkt, Eef1b2, Pclaf, Atp5k, Slc16a1, Hk2, Uqcrfs1, Aprt, Psat1, Rps2, Cyc1, Rpl23a, Ostc, Akr1b8, Shroom3, Gsdmc, Mgst2, Fam107b, Casp14, Btf3, Urah, Cox7b, Plin2, Plaur, Klk10, Klk8, Slc16a3, Tle5, Gpr132</i>
Downregulated genes	<i>Hadha, Ptger4, Ifrd1, Rpl9, Ghr, Rbm39, Mpc2, Col5a2, Nfkbia, Ktn1, Sirt1, Cish, Sgpp1, Bcar1, Gstm1, Trps1, Pdzd2, Tgfb2, Hadhb, Hpgds, Gse1, Rnf167, Cyp26b1, Kdm6b, Zbtb7b, Sash1, Skint7, Atxn7, N4bp3, Ephx1, Stox2, E2f, Fcgrt, Hmgn1, Trim7, Calu, Spred2, Ptms, Snhg16, Ckb, Ets2, Aff3, Zbtb16, 4921524J17Rik, Wnt7b, Ctnna1, Bcap31, Ccdc85b, Mill1, Pard6g, Bsdcl1, Epcam, Gna1l, Rab18, Phldb3, Tspan5, Hsd3b7, Atrx, Pcgf5, Rab14, Pel12, Selenop, Pfand2, Lgals3, Nhs1l, Nop58, Egr2, Cdh13, Antxr1, Son, Tgfb3, Srsf10, Brd1, Efn1a, Cers6, Ly6c1, Dnase2a, Tiparp, Mast4, Purb, Wwc2, Tasor, Lph, Cb×4, Npepps, Thra, Akap9, Mgst3, Mcl1, Camta1, Kif5b, Pard3, Kmt2c, Pak3, Ptma, Tor1aip2, Cachd1, Adgra3, Skint9, Mex3c, Blvr, Gm2000, Rheb, Tesc, Acsbg1, Acer3, Elovl4, Rel, Reep3, Ly6g6e, Nasp, Pon2, Slc22a4, 2510002D24Rik, Homer2, Dusp7, Vkorc1, Hopx, Dlc1, Efn3, Ubb, Angptl4, Arl5b, Mycbp2, Rsf1, Phf13, Prkx, Tsc22d2, Fus, Tiam1, Trim2, Map3k1, Acpp, Cpxm2, Hspa2, Wnt3, Tnxb, Rab6a, Sde2, Arf4, Micu1, Vezf1, Aldh2, Ankrd17, Pip5k1a, Achr3, Crim1, Kctd12, Wls, Sec62, Actg1, Pcmd1, Apcd1, Cttnbp2, Hivep2, Cobl, Rbbp8, Coq10b, Gnas, Il2orb, Rell1, Klf6, Hagh, Sox6, Nfat5, Ar, Rbm4b, Rabac1, Gjb3, Mbnl2, Elf2, Fkbp2, Arrdc3, Rtf1, Tuba1b, Rps19, Krt10, Ripk4, Fxyd3, Luzp1, H2-M2, Tex30, Bcl9l, Krt78, Map2k3, Thbs1, Esf1, Ier3, Tmem159, Sema3c, Fry, Sytl1, Tnfrsf1a, Zranb1, Lmo7, Cyp4b1, Trp53inp1, Arl13b, Eph4, Snhg12, Chit1, Cavin3, Trim47, Stk40, Susd2, Nupr1, Polb, Frmd6, Il6ra, Cd109, Amotl1, Cavin1, Aff1, Bmpr2, Anxa2, Tjp2, Lpp, Srsf2, Notch1, Itpkc, Eid1, Fgfr1, Mgl1, Wdr47, Acer1, Tmem59, Adh7, Phf23, Crlf1, Zbtb7a, Adgrg6, Nenf, Tceal8, Myc, Tuba4a, Alox12e, Pik3r1, Arhgap5, Arhgef12, Oas1f, Slco2a1, Zfp361l, Col16a1, Per1, Eif1, Uap1, Lrp4, Ocln, Ndel1, Selenok, Paqr5, Rassf1, Nrn1, Gls, Tanc1, Serpinb7, Clca3a2, Ikzf2, Ash1l, Dd×3x, Slc25a25, Net1, Prlr, Tmed5, Sult5a1, Ppp3ca, Klfl10, Dd×5, Maff, Cdh1, Matr3, Ints6, Nr4a3, Il34, Palmd, Actn4, Rpl10, Ubc, Sh3d21, Hmgcs1, Pof1b, Slc7a6, Lsr, Esyt2, Plec, Auts2, Il11ra1, Sertad2, Ndufa4l2, Skint11, Sf3b1, Sptlc3, Rcan1, Epgn, Tnfrsf19, Sec24a, Atp2b4, Mbtid1, Egr3, Dsc3, Ifi27, Itga6, Sowahc, Atp1b1, Creb5, Cldn1, Twist1, Nufip2, Lnpep, Abi3bp, Gadd45g, Nfia, Mat2a, Prxl2b, Gjb5, Tpm1, Bcl6, F2rl1, Nfkbiz, Hnrnp1, Klfl2, Cav1, Limd1, Trim29, Nr4a2, Bok, Sfr1, Sar1b, Ppfbp2, Gm11808, Trim16, Nbl1, Ebf1, Csrnp1, Flvcr1, Stim1, Golim4, Clic3, Tecr, Ptpn14, Sema3d, Kmt2e, Bmp2, Scin, Tnfaip3, Map1lc3a, Ltbp4, Adrb2, Pdlim2, Ppl, Oat, Azin1, Dleu2, Rsrp1, Timp2, Ndfip2, S100a10, Mcc, Gem, Fcgbp, Klfl3, Ly6d, Lmo4, Spry1, Sptbn1, Tcf4, Retreg1, Lmna, Nfix, Emp2, Wwtr1, Nectin2, Ssbp2, Tcim, Chl1, Tob1, Sertad1, Efemp1, Rsrc2, Eif4a2, Gata3, Tnfaip8, Socs3, Clk1, Prss23, Clip4, Sik1, Slco3a1, Sparc, Tra2b, Tob2, Kank1, Col3a1, Rpl9-ps6, Syne2, Cldn4, Htra1, Mef2a, Tra2a, Rpl10-ps3, Rarres1, Srsf3, Top1, Prnp, Crip2, Hs3st6, Pmp22, Serpinh1, Tmem45a, Ahnak, Arid4b, Icam1, Emp1, Slc38a2, Ccnd2, Errfi1, Cd55, Dgcr6, Btg2, Zfp3612, Sfn, Ivns1abp, Ptn, Tppp3, Fosl1, Dnajb4, Iffo2, Tnfrsf12a, Itm2b, Cfap57, Fgfr2, Csrp1, Arid5b, Ppp1r15a, Pkib, Wsb1, Mt2, Trp63, Calm2, Dsg1a, Rnd3, Pim3, Timp3, Ahnak2, Casz1, Col1a1, Junb, Zbtb20, Rgcc, Wee1, Nfib, Col17a1, Arl4a, Mt1, Plpp3, Srsf7, Dusp1, 4930523C07Rik, Scd1, Ccn1l, Foxn3, Hspb8, Igfbp5, Id1, Bbox1, Ovov1, Tsc22d3, Cdkn1a, Capns2, Tuba1a, Gadd45b, Tacstd2, Klj9, Dst, Zfp36, Krt80, Gas6, Cd9, Kif21a, Jun, Txnip, Col1a2, Xist, Sdc4, Ccn1, Apoe, Mt4, Anxa8, Hspb1, Tubb4b, Ly6g6c, Ier2, Nr4a1, Dcn, Egr1, Serpinb2, Fam25c, Fosb, Fos, Atf3</i>

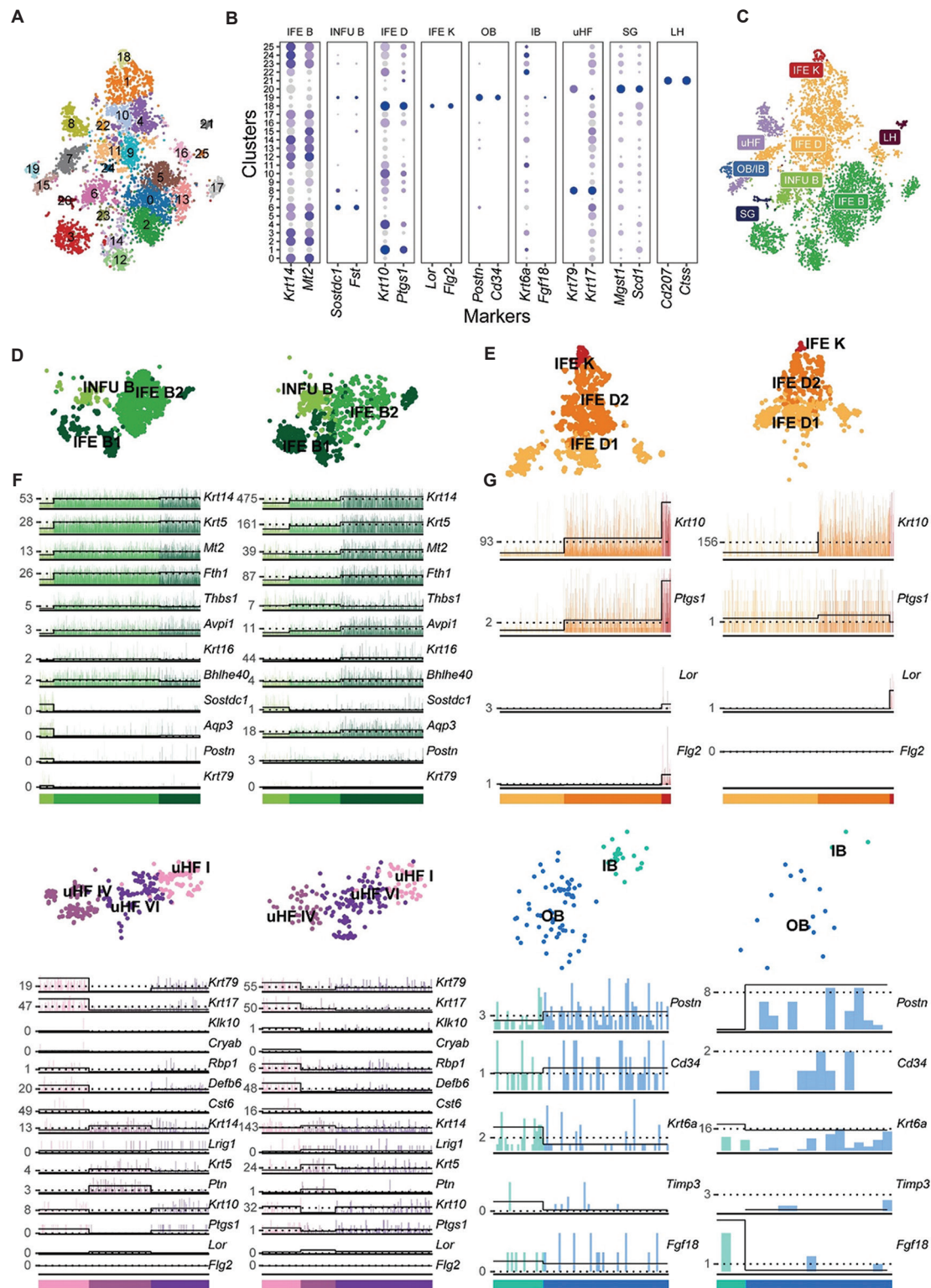


Figure S1. Detailed subtype analysis of major cell types. (A-C) Marker gene heatmap is used to identify primary cell types in skin tissues, including IFE B, IFE D, IFE K, INFU B, OB, IB, uHF, SG, and LH. (D-G) Multi-gene expression analysis leads to the finer differentiation of uHF, IFE B, and IFE D into their respective subtypes: uHFII, uHFIV, uHFVI, IFE B1, IFE B2, IFE D1, and IFE D2.

Abbreviations: IB: Inner bulge; IFE: Interfollicular epidermis; IFE B: IFE basal; IFE D: IFE differentiated; IFE K: IFE keratinized; INFU B: Infundibulum basal; LH: Langerhans cells; OB: Outer bulge; SG: Subcutaneous gland; uHF: upper-hair follicle.

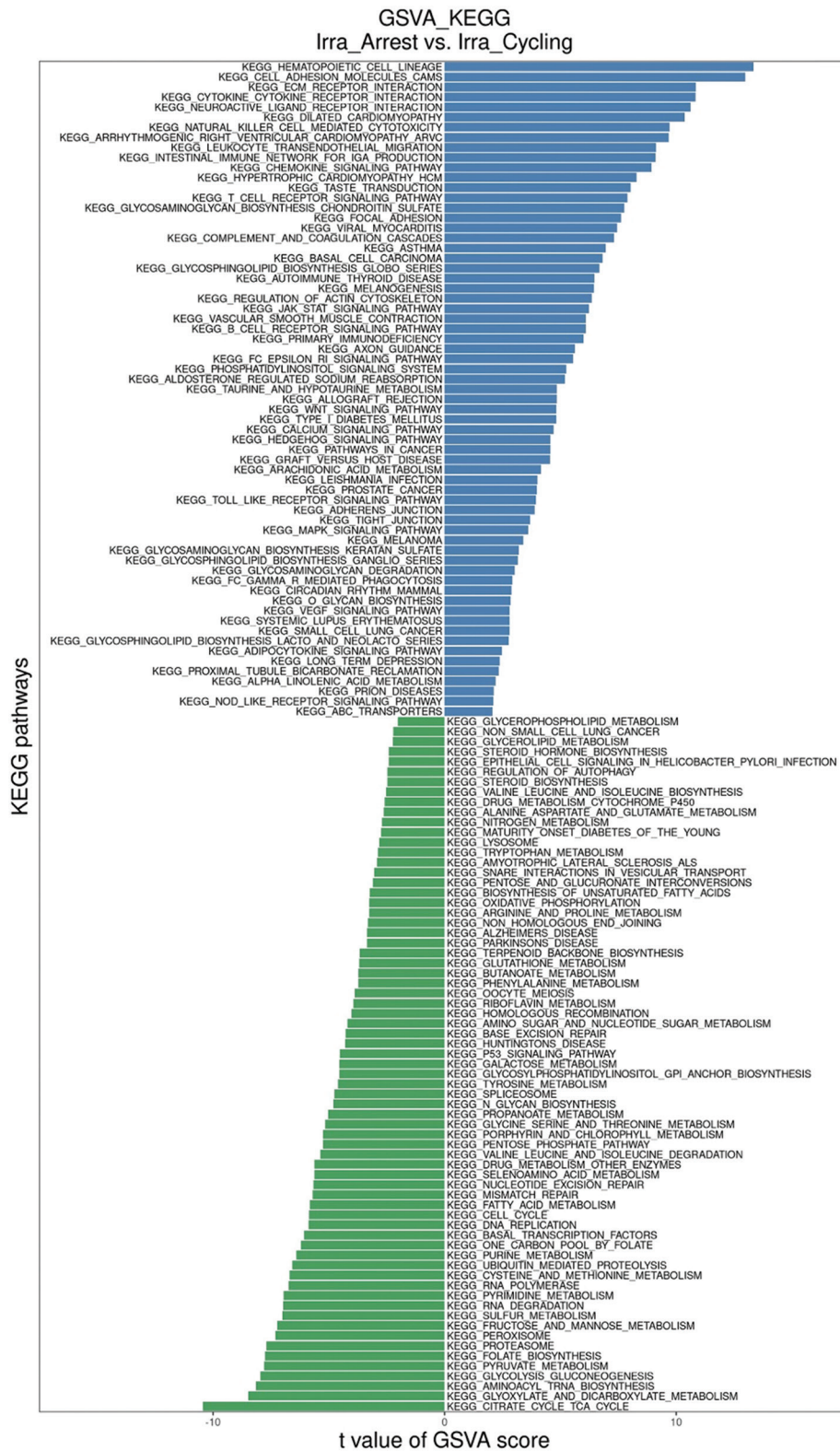


Figure S2. GSAV of pathways in irradiated IFE C cells arrested at G2M phase (Irra_Arrest, blue) versus those that have transitioned the phase (Irra_Cycling, green)
Abbreviations: IFE C: Interfollicular epidermis cycling; GSAV: Gene set variation analysis.