Supplementary Table 1. List of genes comprising the RNA expression signatures measured with the BC360 panel.

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| **RNA expression signature** | **Gene** |
| **APM** | *TAP1, TAP2, TAPBP, HLA-A, HLA-B, HLA-C* |
| **Apoptosis** | *AXIN1, BAD, BAX, BBC3, BCL2L1* |
| **AR** | *AR* |
| **B7-H3** | *CD276* |
| **p53** | *DDB2, CDKN1A, RNF103, APH1B, TCEAL1, BTG2, KIAA0040, MAP2K4, NPEPPS, GATA3, SLC39A6, CCND1, NEO1, TOP2A, CDC25C, NUDT1, FNBP1, CENPF, POLD1, NCAPH2, PTTG1, CDCA7L, GGH, CDK1, MKI67, KIFC1, MYBL2, KIF23, CEP55, UBE2C, CDC25B, TRIP13, MAD2L1, ATAD2, FOXM1, AURKA, CDKN3, CCNA2, TAP1, CKS1B, MCM3, TUBA4A, PREP, RFC4* |
| **BC proliferation** | *MKI67, CEP55, KIF2C, MELK, CENPF, EXO1, ANLN, RRM2, UBE2C, CCNB1, CDC20* |
| **BRCAness** | *ADM, ANLN, ASPM, ATP10B, BBOX1, BLM, BRCA1, BTG2, SKA3, ISM1, C5orf38, CCNA2, CCNB1, CCNE1, CD68, CDC7, CDCA8, CDKN1C, CHRNA5, CRYAB, CYP4F3, DCN, DDX39A, DEPDC1, EXO1, FAM83D, FLRT3, FXYD3, GJB2, HIST1H1C, HLA-E, IL1R2, KCNB1, KIF14, KRT6B, LEMD1, MCM2, MCM3, MME, MT1G, NEIL3, NETO2, PCNA, PKMYT1, POLD1, POLQ, RFC4, RRM2, SPC25, ST6GALNAC2, TRIP13, TTK, TYMS* |
| **CD8+ T-Cells** | *CD8A, CD8B* |
| **CDK4**  | *CDK4* |
| **CDK6** | *CDK6* |
| **Cell adhesion** | *CLDN1, CLDN3, CLDN4, CLDN7, OCLN, CDH1* |
| **Claudin low** | *CLDN3, CLDN4, CLDN7, SNAI1, SNAI2, TWIST1, ZEB2, CD44, ITGA6, ITGB1, MUC1, THY1, ADAM12, ADM, CDC20, DEPDC1, HES1, HLA-DPB1, MMP3, PIK3CD, TGFB1, ZFPM2* |
| **Cytotoxic cells** | *CTSW, GNLY, GZMA, GZMB, GZMH, KLRK1, PRF1, NKG7* |
| **Cytotoxicity** | *GZMA, GZMB, GZMH, PRF1, GNLY* |
| **Differentiation** | *TSPAN1, AGR2, FSTL1, CLDN3, CLDN7, VCAN, CXADR, ELF3, FHL1, CBLC, ITGB6, MUC1, CEACAM6, DDR2, S100A14, HEG1, JAM2, SFRP1, BMP7, SLPI, SNAI2, TCF4, TMPRSS2, VIM, WNT5A, CAV1, GDF15, CDH1* |
| **Endothelial cells** | *BCL6B, CDH5, CLEC14A, CXorf36, FAM124B, KDR, MMRN2, MYCT1, PALMD, ROBO4, TIE1* |
| **ER signaling** | *ANXA9, BORCS7, ESR1, DNAJC12, TBC1D9, MAPT, NAT1, SCUBE2, SYTL4, TCEAL1, TFF1, ADCY9, ADD1, CDCA8, DDX39A, EIF3B, ELOVL2, HEMK1, IFT140, ITPR1, PFDN2, PGR, PTGER3, SERBP1, SHMT2, TLE3, WDR77* |
| **ERBB2** | *ERBB2* |
| **ESR1** | *ESR1* |
| **FOXA1** | *FOXA1* |
| **HRD** | *ATP10B, BLM, BRCA1, BTG2, C5orf38, CCNE1, CDCA5, CDCA8, CHRNA5, CRYAB, FXYD3, HIST1H1C, HLA-E, KIF14, LEMD1, NETO2, RFC4, TRIP13* |
| **Hypoxia** | *ADM, BNIP3, PGK1, SLC2A1* |
| **IDO1** | *IDO1* |
| **IFNγ** | *STAT1, CXCL9, CXCL10* |
| **Inflammatory chemokines** | *CCL2, CCL3L1, CCL4, CCL7, CCL8* |
| **Macrophages** | *CD163, CD68, CD84* |
| **Mammary stemness** | *VIM, DDR2, SNAI2, VCAN, FSTL1, HEG1, FHL1, CAV1, JAM2, TCF4* |
| **Mast cells** | *MS4A2, CPA3, HDC, TPSAB1* |
| **MHC2** | *HLA-DPA1, HLA-DPB1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DMA* |
| **PD1** | *PDCD1* |
| **PD-L1** | *CD274* |
| **PD-L2** | *PDCD1LG2* |
| **PGR** | *PGR* |
| **PTEN** | *PTEN* |
| **RB1** | *RB1* |
| **ROR** | *ACTR3B, ANLN, BAG1, BCL2, BIRC5, BLVRA, CCNB1, CCNE1, CDC20, CDC6, NUF2, CDH3, CENPF, CEP55, CXXC5, EGFR, ERBB2, ESR1, EXO1, FGFR4, FOXA1, FOXC1, GPR160, GRB7, KIF2C, NDC80, KRT14, KRT17, KRT5, MAPT, MDM2, MELK, MIA, MKI67, MLPH, MMP11, MYBL2, MYC, NAT1, ORC6, PGR, PHGDH, PTTG1, RRM2, SFRP1, SLC39A6, TMEM45B, TYMS, UBE2C, UBE2T* |
| **SOX2** | *SOX2* |
| **Stroma** | *FAP, COL6A3, ADAM12, OLFML2B, PDGFRB, LRRC32* |
| **TGFβ** | *TGFB1* |
| **TIS** | *CCL5, CD27, CD274, CD276, CD8A, CMKLR1, CXCL9, CXCR6, HLA-DQA1, HLA-DRB1, HLA-E, IDO1, LAG3, NKG7, PDCD1LG2, PSMB10, STAT1, TIGIT* |
| **Regulatory T cells** | *FOXP3* |