### Supplementary Table 1: Examples miRNAs dysregulated in endocrine-related cancers

This is not a comprehensive list of miRNAs in breast, prostate, endometrial, or thyroid tumors. The reader is referred to reviews listed in the text for additional miRNAs. Many of the IncRNAs that downregulate the listed miRNA have been identified in cancers other than those discussed here.

**Abbreviations:** BCa = breast cancer; BPH = benign prostatic hyperplasia; ceRNA = competing endogenous RNA (‘miRNA sponge’); CRPCa = castration-resistant prostate cancer; EC = endometrial cancer; EEC = endometrioid endometrial carcinomas; DCIS = ductal carcinoma in situ (breast cancer); FTC = follicular thyroid cancer; PCa = prostate cancer; PTC = papillary thyroid cancer; HCC = hepatocellular carcinoma; NSCLC = non-small cell lung cancer

<table>
<thead>
<tr>
<th>miRNA</th>
<th>Endocrine cancer</th>
<th>targets</th>
<th>Cell function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Let-7b</td>
<td>lower in EC versus normal endometrial tissue (Srivastava, et al. 2017)</td>
<td>HMGA2 in EEC (Romero-Pérez, et al. 2013); DICER1 (Forman, et al. 2008); IncRNA H19 is a ceRNA for let-7b in BCa (Zhou, et al. 2017a)</td>
<td>'oncosuppressor' - stimulates apoptosis (White, et al. 2011); stimulates EMT in EEC by regulating transcription factors, <em>e.g.</em>, SNAIL, SLUG, ZEB1, and ZEB2 (Montserrat, et al. 2012)</td>
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<tr>
<td>Let-7c</td>
<td>Lower in DCIS than histologically normal breast epithelium (HN) (Hannafon, et al. 2011); lower in serum of BCa patients than controls (Li, et al. 2015); lower in luminal B than luminal A or normal breast tissue (Bailey, et al. 2015); “Andro-miR” in PCa; higher in serum of PCa patients versus men with BPH (Cochetti, et al. 2016)</td>
<td>RAS, CCND1, IL6, LIN28, MMP, HMGA2, ERK, ESR1 (ERα) (Sun, et al. 2016); USP42 USP44, and ATXN7L3 (Spolverini, et al. 2017) encoded in an intron of the IncRNA MIR99AHG (LINC00478)</td>
<td>Tumor suppressor, inhibits Wnt signaling</td>
</tr>
<tr>
<td>miR-7</td>
<td>Higher in DCIS than HN (Hannafon et al. 2011); Upregulated in BCa tissues (Adhami, et al. 2017); miR-7 expression was negatively correlated with the stage, grade and survival of the BCa patients (Cui, et al. 2017c).</td>
<td>SRC1 (Liao, et al. 2017); IncRNA MALAT1 acts as a ceRNA for miR-1 in TNBC (Jin, et al. 2016)</td>
<td>Predominantly downregulated in cancers by hypermethylation of CpG islands in the promoter region (Han, et al. 2017a)</td>
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<tr>
<td>miR-10a</td>
<td>Higher expression in breast tumors was</td>
<td>CHL1 (Long, et al. 2012); NCOR2</td>
<td>oncomiR (Melo, et al. 2014)</td>
</tr>
<tr>
<td>miR-10b</td>
<td>miR-10b is down-regulated in breast tumors and upregulated in sera (Chan, et al. 2013); Downregulated in BCa tissues (Adhami et al. 2017); increased in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>NCOR2 (Foley et al. 2011); BUB1, PLK1, and CCNA2 (Biagioni, et al. 2012); HOXD10 and KLF4 (Singh, et al. 2014)</td>
<td>linked to EMT and metastasis in BCa, PCa, glioma, and metastatic pancreatic cancer, but heterogeneously expressed in circulating tumor cells from breast, prostate, and colorectal patients (Gasch, et al. 2015)</td>
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<tr>
<td>miR-17-3p</td>
<td>Lower in DCIS than HN (Hannafon et al. 2011); decreased in high grade prostate tumors (Zhang, et al. 2009)</td>
<td>OLG2 (Chen, et al. 2011a); PTEN, VIM, and GALNT7 (Shan, et al. 2013); TIMP3 (Yang, et al. 2013); IncRNA GCASPC in gall bladder cancer (Ma, et al. 2016)</td>
<td>Tumor suppressor activity</td>
</tr>
<tr>
<td>miR-18a</td>
<td>Higher in ERα-breast tumors (Yoshimoto, et al. 2011); higher in DCIS than HN (Hannafon et al. 2011); Upregulated in PCa (Vanacore, et al. 2017);</td>
<td>ESR1/ERα (Castellano, et al. 2009)</td>
<td>Encoded in the miR-17-92a cluster; tumor suppressor in PCa</td>
</tr>
<tr>
<td>miR-21</td>
<td>Higher in breast tumors (Iorio, et al. 2005); higher miR-21 associates with clinical stage and lymph node metastasis (Yan, et al. 2008); Upregulated in BCa tissues (Adhami et al. 2017); Upregulated in PCa and promotes CRPCa (Vanacore et al. 2017); upregulated by AR in PCa (Massillo, et al. 2017); Upregulation in PCa is associated with metastasis</td>
<td>NFIB (Hannafon et al. 2011); PTEN, PDCD4 (Wickramasinghe, et al. 2009); RASA1 and RASA2 (Queiros, et al. 2013); BTG2, FBXO11, RECK, MARCKS, and TPM1 (Kanwal, et al. 2017); TIMP3 (Petrovic 2016); miR-21 negative regulates IncRNAs GAS5 (Zhang, et al. 2013c), CASC2 (Wang, et al. 2015); IncRNAs MEG2 and NBAT1 downregulate miR-21-5p</td>
<td>Promotes BCa invasion, angiogenesis and metastasis (Petrovic 2016); Increases CAF formation, angiogenesis, paxitaxel-resistance in ovarian cancer, and EMT in BCa (Yang, et al. 2017b) and PCa (Vanacore et al. 2017); induces CRPCa (Vanacore et al. 2017)</td>
</tr>
<tr>
<td>miRNA</td>
<td>Changes and Associated Genes</td>
<td>Downregulated Genes or Tissue Types</td>
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<tr>
<td>miR-26a-1</td>
<td>Higher miR-26a in primary breast tumors as associated with clinical benefit of tamoxifen (Egeland et al. 2015); miR-26a-5p was higher in serum of PCa patients versus men with BPH (Cochetti et al. 2016)</td>
<td>ESR1 (Chen, et al. 2011b); CHD1, GREB1, and KPNA2 (Tan, et al. 2014); CDC2, CCNE1 (Jansen, et al. 2012)</td>
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<tr>
<td>miR-29b, miR-29c</td>
<td>Upregulated in BCa tissues (Adhami et al. 2017);</td>
<td>DICER1 (Cochrane, et al. 2010); TTP, PTEN, ATP1B1, KLF4, MYB, ANGPTL4, LOX, MPP9, PDGFC, VEGFA, ADAM12, and SERPINH1 (HSP47) reviewed in (Muluungwi, et al. 2017b); ATP5G1 and ATPIF1 (Muluungwi, et al. 2017a); IncRNA H19 acts as a ceRNA for miR-29b-3p in bladder cancer cells (Lv, et al. 2017)</td>
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<tr>
<td>miR-30c</td>
<td>Higher expression of miR-30c-5p in primary tumors was associated with clinical benefit of tamoxifen treatment (Egeland et al. 2015); Downregulated in PCa tissues (Huang, et al. 2016b; Ling, et al. 2014); Downregulated in PTC (Pallante et al. 2013)</td>
<td>CTGF (Bhat-Nakshatri, et al. 2009); BCL9 (Ling, et al. 2016); HOXA1 (Ni, et al. 2017); SRSF1 (Huang, et al. 2017b); KRAS (Zhang, et al. 2017a); IncRNA AK017368 acts as a ceRNA for miR-30c in skeletal muscle cells (Liang, et al. 2017)</td>
<td></td>
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<tr>
<td>miR-31</td>
<td>Upregulated in PCa (Kanwal et al. 2017); Downregulated in PCa tissues (Fuse, et al. 2012); increased in PTC (Pallante et al. 2013); miR-31-5p</td>
<td>STK40 and LATS2 (Luan, et al. 2017a); miR-31 and its host gene IncRNA MIR31HG are hyper-methylated in oncomiR in PCa (Kanwal et al. 2017); anti-metastatic in BCa</td>
<td></td>
</tr>
<tr>
<td>miR</td>
<td>Expression in BCa and PCa Tissue</td>
<td>Regulation and Signaling Pathways</td>
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</table>
| miR-34b-5p; miR-34c-3p/5p | Downregulated in PCa tumors (Chun-Jiao et al. 2017) and in EC (Srivastava et al. 2017)  
Annotation error in miR-34b (one additional base at the 5’end of the seed sequence) is not found by deep sequencing and endogenously expressed miR-34b has tumor suppressor activity in BCa cells (Engkvist, et al. 2017) | Tumor suppressor; Regulated by p53 binding to the miR-34b/c promoter (Corney, et al. 2007); ectopic miR-34 expression induces apoptosis, cell cycle arrest or senescence in many tumor types (Hermeking 2009) |
| miR-96 | Upregulated in BCa samples (Xiong, et al. 2017a); higher in malignant versus nonmalignant PCa tissue (Schaefer, et al. 2010); increased in EC versus normal endometrial tissue (Srivastava et al. 2017)  
Upregulated in PTC (Song, et al. 2015); miR-96-5p upregulated in FTC (Saiselet et al. 2016) | RECK (Guo, et al. 2014); CDKN1A (Wu, et al. 2015); FOXO1 (Song et al. 2015) | Regulates the AKT/FOXO1/Bim pathway in PTC (Song et al. 2015) |
| miR-99 | miR-99a was downregulated in BCa tissues (Adhami et al. 2017);  
Downregulated in PCa tumors (Chun-Jiao et al. 2017);  
lower in EC versus normal endometrial tissue (Srivastava et al. 2017); miR-99-3p increased in PTC (Pallante et al. 2013) | IGF1R, AKT1 (Jin, et al. 2013) | regulate cell proliferation, cell migration, and AKT/mTOR signaling in skin (Jin et al. 2013); marker of radiation sensitivity in PCa (Rane, et al. 2016) |
| miR-101 | lower in EC versus normal endometrial tissue (Srivastava et al. 2017) | MAGI2 (Sachdeva, et al. 2011)  
LncRNAs that act as ceRNAs for miR-101 include NEAT1(Qian, et al. 2017); XIST (Chen, et al. 2016a); SPRY4-IT1 (Liu, et al. 2017b); SNHG1 (Cui, et al. 2017d); CASC32 (Liu, et al. 2017a); MALAT1 (Li, et al. 2017c); SNHG6 | Growth factor signaling (Muluhngwi and Klinge 2015) |
<table>
<thead>
<tr>
<th>miR</th>
<th>Description</th>
<th>IncRNAs acting as ceRNAs</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>miR-124</td>
<td>Upregulated in PCa (Kanwal et al. 2017)</td>
<td>(ETS1, LAMB1, ROCK1, FLOT1, SPHK1, DC81, IASPP, SLUG) (reviewed in (Klinge 2015))</td>
<td>oncomiR in PCa</td>
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<td></td>
<td></td>
<td>(MALAT1) (Feng, et al. 2016); (LINC-ROR) (Li, et al. 2016a); (HOXA11-AS) (Cui, et al. 2017b); (XIST) (Xiong, et al. 2017b)</td>
<td>OncomiR in PCa tumor suppressor in BCa (Feng et al. 2016)</td>
</tr>
<tr>
<td>miR-125a</td>
<td>lower in breast tumors (Iorio et al. 2005)</td>
<td>(CASP2) (Tang, et al. 2016)</td>
<td>Inhibits apoptosis in PCa</td>
</tr>
<tr>
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<td></td>
<td>(MALAT1) (Feng, et al. 2016); (ANRIL) (Hu, et al. 2017b); (HOXA11-AS) (Chen, et al. 2017a)</td>
<td>Inhibits apoptosis in PCa</td>
</tr>
<tr>
<td>miR125b-</td>
<td>lower in breast tumors (Iorio et al. 2005); high miR-125b-5p correlated</td>
<td>(BAK1, BCL2, DICER1, ERBB2, ERBB3, ETS1, FGFR2, IL6R, JUN, LIN28A, LIN28B, MCL1, MUC1, NCOR2, SIRT7, STAT3, TNF, TP53) (and others) (Katoh 2014)</td>
<td>OncomiR in PCa</td>
</tr>
<tr>
<td>5p</td>
<td>with earlier relapse in ER+/PR+ patients (Vilquin, et al. 2015); Downregulated</td>
<td></td>
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<tr>
<td></td>
<td>in BCa tissues (Adhami et al. 2017); most overexpressed miRNA in PCa (Massillo et al. 2017); Downregulated in PCa tumors (Chun-Jiao et al. 2017);</td>
<td></td>
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</tr>
<tr>
<td>miR-127</td>
<td>Lower in DCIS than HN (Hannafof et al. 2011)</td>
<td>(PRDM1) (Leucci, et al. 2010) IncRNA (MEG3) acts as a ceRNA for miR-127 in osteosarcoma cells (Wang and Kong 2018)</td>
<td>Tumor suppressor in breast, ovarian, HCC, colorectal, kidney cancers; glioma, acute lymoblastic leukemia (Huang,</td>
</tr>
<tr>
<td>miR-128a, miR-128b</td>
<td>Upregulated in PCa (Chun-Jiao et al. 2017); increased in PTC (Pallante et al. 2013)</td>
<td>(TGFR1) (Masri, et al. 2010) (LINC00052) acts as a ceRNA for miR-128 in HCC cells (Xiong, et al. 2016)</td>
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<tr>
<td>miR-139</td>
<td>miR-139-5p was downregulated in BCa tissues (Adhami et al. 2017); increased in PTC (Pallante et al. 2013)</td>
<td>(POLQ, TOP1, TOP2A, RAD54L, and XRCC5) (Pajic, et al. 2017); (RUNX1) (Teng, et al. 2016) IncRNA (XIST) downregulates miR-139-</td>
<td>Tumor suppressor in breast, ovarian, HCC, colorectal, kidney cancers; glioma, acute lymoblastic leukemia (Huang,</td>
</tr>
<tr>
<td>miR</td>
<td>Description</td>
<td>Expression/Alteration</td>
<td>Tumor Suppression</td>
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<tr>
<td>miR-141</td>
<td>Upregulated in PCa (Vanacore et al. 2017); increased in PTC (Pallante et al. 2013)</td>
<td>IncRNA SNHG15 is a ceRNA for miR-141 (Liu, et al. 2017c)</td>
<td>Tumor suppressor in HCC (Lin, et al. 2014) and gastric cancer (Chen, et al. 2014)</td>
</tr>
<tr>
<td>miR-142-3p/5p</td>
<td>Upregulated in DCIS (Farazi, et al. 2011)</td>
<td></td>
<td>Tumor suppressor in NSCLC (Wang, et al. 2017d)</td>
</tr>
<tr>
<td>miR-143</td>
<td>Downregulated in BCa tissues (Adhami et al. 2017); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>MAPK1 (Chang, et al. 2017); DNMT3A (Zhang, et al. 2017c); CIAPIN1 (Wang, et al. 2017a); BCL2 (Ma, et al. 2017);</td>
<td>Tumor suppressor in EC</td>
</tr>
<tr>
<td>miR-145</td>
<td>lower in breast tumors (Iorio et al. 2005); Downregulated in BCa tissues (Adhami et al. 2017); Downregulated in PCa (Vanacore et al. 2017); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>RASA1, MEKK, EGFR (Kent, et al. 2014); TGFNR2 and SMAD3 (Xiang, et al. 2017) IncRNAs TUG1 ad MALAT1 downregulate miR145-5p (Ren, et al. 2017; Xiang et al. 2017); IncRNAs act as ceRNAs for miR-145 include CRNDE (Hu, et al. 2017a), LINC-ROR (Liu, et al. 2017d), and PCAT1 (Xu, et al. 2017)</td>
<td>Tumor suppressor in PCa (Kanwal et al. 2017)</td>
</tr>
<tr>
<td>miR-146a, miR-146b-3p/5p</td>
<td>miR-146a lower in PCa (Vanacore et al. 2017); miR-146a, 146b increased in PTC (Pallante et al. 2013)</td>
<td>miR-146a: ROCK1, EGFR, MMP2 (Kanwal et al. 2017); EGFR (Vanacore et al. 2017); TRAF6 (Li, et al. 2017b) IncRNA HCG18 acts as a ceRNA for miR-146a-5p in nucleus pulposus cells (Xi, et al. 2017); MALAT1 acts as a ceRNA for miR-146b-5p in HCC (Li et al. 2017b)</td>
<td>Tumor suppressor in PCa (Kanwal et al. 2017)</td>
</tr>
<tr>
<td>miR-181b</td>
<td>higher in DCIS than HN (Hannafon et al. 2011); lower in malignant versus nonmalignant PCa tissue (Schaefer et al. 2010); higher in PCa tissues versus normal prostate (He, et al. 2013); increased in PTC (Pallante et al. 2013)</td>
<td>TIMP3 (Lu, et al. 2011); CCND1, CBX7, BCL2, HMGa2, TIMP, p53 (Liu, et al. 2014a); DAX1 (Kanwal et al. 2017)</td>
<td>IncRNA CCAT1 acts as a ceRNA for miR-181b in glioma cells (Cui, et al. 2017a)</td>
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<tr>
<td>miR-182</td>
<td>higher in DCIS than HN (Hannafon et al. 2011); higher in malignant versus nonmalignant PCa tissue (Schaefer et al. 2010); increased in EC versus normal endometrial tissue (Srivastava et al. 2017); miR-182-5p upregulated in FTC (Saiselet et al. 2016)</td>
<td>FOX2, RECK, MTSS1 (Kanwal et al. 2017)</td>
<td>IncRNA UCA1 downregulated miR-182 in glioma cells (He, et al. 2017)</td>
</tr>
<tr>
<td>miR-183</td>
<td>higher in malignant PCa (Schaefer et al. 2010); Upregulated in BCa tissues (Adhami et al. 2017); Upregulated in PCa (Chun-Jiao et al. 2017); increased in EC (Srivastava et al. 2017); miR-183-5p upregulated in FTC (Saiselet et al. 2016)</td>
<td>SLC39A1, DKK3, SMAD4, KLK3/PSA (Kanwal et al. 2017)</td>
<td>IncRNA MEG3 acts as a ceRNA for miR-183 in pancreatic cancer cells (Zhang and Feng 2017)</td>
</tr>
<tr>
<td>miR-184</td>
<td>Higher in serum from BCa patients compared to age-matched healthy controls (Fu, et al. 2016); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td></td>
<td>IncRNA UCA1 acts as a ceRNA for miR-184 in PCa cells (Zhou, et al. 2017b)</td>
</tr>
<tr>
<td>miR-185</td>
<td>Downregulated in BCa tissues (Zou, et al. 2016); Downregulation in PCa is associated with metastasis (Massillo et al. 2017)</td>
<td>DMT1 and E2F6 (Tang, et al. 2014); AR (Liu, et al. 2015); VEGFA (Ma, et al. 2015; Wang, et al. 2014); HMGa2 (Zou et al. 2016); BRD8 (Jiang, et al. 2016)</td>
<td>IncRNA XIST acts as a ceRNA for miR-185 in gastric cancer cells (Zhang, et al. 2017b)</td>
</tr>
<tr>
<td>miR-187</td>
<td>Downregulated in PCa tissues (Chun-Jiao et al. 2017; Fuse et al. 2012); increased in PTC (Pallante et al. 2013)</td>
<td>DAB2 (Chao, et al. 2011); ALDH1A (Casanova-Salas, et al. 2015); SOX4, NT5E and PTK6 (Zhang, et al. 2016a)</td>
<td>Tumor suppressor in prostate, gastric, NSCLC, and colorectal cancers</td>
</tr>
<tr>
<td>miR-191</td>
<td>higher in DCIS than HN (Hannafon et al. 2011)</td>
<td>EGR1, CDK6, BDNF, and SATB1 (reviewed in (Klinge 2015))</td>
<td>oncomiR in 20 different malignancies but downregulated in 6 other cancers - acting as a tumor suppressor (Nagpal and Kulshreshtha 2014)</td>
</tr>
<tr>
<td>miR-193; miR-193a-3p; miR-193b</td>
<td>miR-193 is higher in DCIS than HN (Hannafon et al. 2011); miR-193a-3p is highly expressed in breast tumors (Dvinge, et al. 2013); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>PLAU (Li, et al. 2009); FASN (Wahdan-Alaswad, et al. 2014); DNAJC13 and RAB22A (Yang, et al. 2014); DDAH1 (Hulin, et al. 2017); IncRNA UCA1 acts as a ceRNA for miR-193-3p in NSCLC (Nie, et al. 2016); IncRNA SNHG7 acts as a ceRNR for miR-193b in NSCLC (She, et al. 2017)</td>
<td>Tumor suppressor in PCa (Rauhala, et al. 2010) and BCa cells (Yang et al. 2014)</td>
</tr>
<tr>
<td>miR-195</td>
<td>Lower in DCIS than HN (Hannafon et al. 2011)</td>
<td>CCND1 (Hannafon et al. 2011); IncRNA PVT1 acts as a ceRNA for miR-195 in NSCLC cells (Wu, et al. 2017)</td>
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<tr>
<td>miR-199</td>
<td>Downregulated in PCa tumors (Chun-Jiao et al. 2017); Downregulated in PTC (Pallante et al. 2013) and in FTC (Saiselet et al. 2016)</td>
<td>GRP78 (Ahmadi, et al. 2017)</td>
<td></td>
</tr>
<tr>
<td>miR-200b, miR-200c</td>
<td>Downregulated in BCa (Castilla, et al. 2012; Wee, et al. 2012); Downregulated in PCa (Vanacore et al. 2017); Downregulation in PCa is associated with metastasis (Massillo et al. 2017); Upregulated in PCa tumors (Chun-Jiao et al. 2017);</td>
<td>ZEB1, ZEB2, CYP1B1 (Manavalan, et al. 2013); SLUG, BCL2, E2F2, RND3, VEGFA, KDR, FLT1, ETS1, SUZ12, BMI1, NOTCH, LIN28B, FOXM1 (Chen and Zhang 2017); IncRNA MALAT1 acts as a ceRNA for miR-200c in cancers including EEC (Li, et al. 2016c)</td>
<td>Either oncomiRs or tumor suppressors depending on the cancer (Chen and Zhang 2017); EMT in PCa (Vanacore et al. 2017)</td>
</tr>
<tr>
<td>miR-204</td>
<td>Lower in DCIS than HN (Hannafon et al. 2011); Downregulated in BCa tissues (Adhami et al. 2017); Downregulated in PCa (Chun-Jiao et al. 2017; Vanacore et al. 2017); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>( BLC2 ) in PCa (Vanacore et al. 2017); ( BDNF, CDC42, CCND2, EPHB1, EZRIN, FOXC1, FOXM1, JAK2, PDEF, RUNX2, SIRT1, SIX1, SLUG, SAM68, SOX4 ) (Li, et al. 2016d); miR-204 is repressed by its targets ( XRN1 ) and ( TRKB ) in PCa and EC, respectively (Li et al. 2016d). Reciprocal regulation of lncRNA ( MALAT1 ) and miR-204 in BCa cells (Wang, et al. 2017c); ( MALAT1 ) is a ceRNA for miR-204 in HCC cells (Hou, et al. 2017).</td>
<td>Either oncomiR or tumor suppressor (Li et al. 2016d)</td>
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<tr>
<td>miR-205-5p</td>
<td>Downregulated in BCa tissues (Adhami et al. 2017); Downregulated in PCa tissues (Chun-Jiao et al. 2017; Fuse et al. 2012); downregulation in PCa is associated with metastasis (Massillo et al. 2017); increased in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>( AR ) (Kanwal et al. 2017); ( PTEN ) (Srivastava et al. 2017); ( ERBB3, E2F1, E2F5, PRKCE, and BCL2 ) (Kanwal et al. 2017) Two lncRNAs ( RP11-395G23.3 ) and ( LA16c-313D11.11 ) associated with EC were ceRNAs for miR-205-5p in EC cells (Xin, et al. 2015).</td>
<td>Tumor suppressor in PCa (Kanwal et al. 2017)</td>
</tr>
<tr>
<td>miR-219</td>
<td>Downregulated in PTC (Pallante et al. 2013)</td>
<td>( EGFR ) (Rao, et al. 2013); ( ESR1/ER\alpha ) in PTC (Huang, et al. 2015); ( PDGF ) (Xiong, et al. 2015); ( ROBO1 ) (Jiang, et al. 2015); LncRNAs that are ceRNA for miR-219: ( TUG1 ) (Yan, et al. 2017a) and ( HMGA2 ) (Sun, et al. 2017).</td>
<td>Tumor suppressor Twist/Wnt/( \beta )-catenin signaling pathway (Wei, et al. 2017)</td>
</tr>
<tr>
<td>miR-221</td>
<td>lower in malignant versus nonmalignant PCa tissue (Schaefer et al. 2010); Upregulated in PCa (Kanwal et al. 2017); Upregulated in PCa (Vanacore et al. 2017); miR-221-3p upregulated in FTC (Saiselet et al. 2016)</td>
<td>( ESR1/ER\alpha ) (Di Leva, et al. 2010)</td>
<td>Overexpressed in PCa and acts as an oncomiR</td>
</tr>
<tr>
<td>miR-222</td>
<td>Increased in breast tumors and correlates with T stage, high histological grade, high Ki67, and HER2+ (Han, et ( TIMP3 ) (Lu et al. 2011); ( ESR1/ER\alpha ) (Di Leva et al. 2010); ( KIT ), Promotes EMT (Lima, et al. 2017); Released from CAFs (Yang et al. 2017b)</td>
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<tr>
<td>miR-223</td>
<td>miR-223-3p increased in BCa tissue samples (Pinatel, et al. 2014); increased in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>STAT5A (Pinatel et al. 2014); CAPRIN1 (Gong, et al. 2013); EGF (Fabris, et al. 2016)</td>
<td>STAT and RAS family pathways (Pinatel et al. 2014)</td>
</tr>
<tr>
<td>miR-292</td>
<td>Downregulated in PTC (Pallante et al. 2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>miR-301</td>
<td>Higher expression in lymph node negative (LNN) invasive ductal BCa (Shi, et al. 2011); Upregulated in PCa tumors (Chun-Jiao et al. 2017);</td>
<td></td>
<td></td>
</tr>
<tr>
<td>miR-345</td>
<td>Downregulated in PCa tissues (Chen, et al. 2016c); Downregulated in PTC (Pallante et al. 2013)</td>
<td>SMAD1 (Chen et al. 2016c)</td>
<td></td>
</tr>
<tr>
<td>miR-365</td>
<td>higher in DCIS than HN (Hannafon et al. 2011)</td>
<td>MYBL2 (Papetti and Augenlicht 2011); NKX2-1 (Kang, et al. 2013); WNT5A (Wang, et al. 2017b) in cancer cells</td>
<td></td>
</tr>
<tr>
<td>miR-372</td>
<td>Downregulated in PCa (Vanacore et al. 2017); lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>RELA (p65) (Vanacore et al. 2017)</td>
<td></td>
</tr>
<tr>
<td>miR-375</td>
<td>Upregulated in PCa (Vanacore et al. 2017);</td>
<td>MTDH (Ward, et al. 2013); SEC23A,</td>
<td>EMT oncomiR in PCa (Kanwal</td>
</tr>
<tr>
<td>miRNA</td>
<td>Expression Pattern</td>
<td>Differentially Expressed Gene Products</td>
<td>Functions or Effects</td>
</tr>
<tr>
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<tr>
<td>miR-379</td>
<td>upregulation in metastatic PCa (Massillo et al. 2017)</td>
<td>IncRNA TINCR acts as a ceRNA for miR-375 in gastric cancer (Chen et al. 2017c)</td>
<td></td>
</tr>
<tr>
<td>miR-383</td>
<td>Lower in DCIS than HN (Hannafon et al. 2011)</td>
<td>RBMS1 (Yin, et al. 2012); PPP1R10 (Huang, et al. 2014); CD44 (Bucay, et al. 2017)</td>
<td></td>
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<tr>
<td>miR-410</td>
<td>increased in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>MMP16 in EC cells (Rak, et al. 2017); miR-410-3p targets SNAIL in BCa cells ;(Zhang, et al. 2016c) GSK3B (Ke, et al. 2017); IncRNA CCAT1 acts as ceRNAs for miR-410 are in glioma cells (Wang, et al. 2016b) and in colon cancer cells (Li, et al. 2017a)</td>
<td>Promotes stemness</td>
</tr>
<tr>
<td>miR-429</td>
<td>Downregulated in BCa and lower in metastatic BCa (Castilla et al. 2012); increased in EC (Srivastava et al. 2017)</td>
<td>PTEN (Srivastava et al. 2017); CDKN1B (p27Kip1) (Kanwal et al. 2017)</td>
<td>oncomiR in PCa (Kanwal et al. 2017)</td>
</tr>
<tr>
<td>miR-449a</td>
<td>increased in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>CDC6 and CDC25A (Yang, et al. 2009); CDC25A in EC cells (Ye, et al. 2014); CDC25A and HDAC1 in PCa cells (Mao, et al. 2016a); MYC in PCa cells (Mao, et al. 2016b) Downregulated by ANRIL in gastric cancer cells (Zhang, et al. 2014)</td>
<td>Tumor suppressor activity in EC (Ye et al. 2014) and in PCa (Mao et al. 2016a)</td>
</tr>
<tr>
<td>miR-495</td>
<td>lower in EC versus normal endometrial tissue (Srivastava et al. 2017)</td>
<td>FOXC1 (Ahmadi et al. 2017) GRP78 (Ahmadi et al. 2017); AKT and MTOR in PCa cells (Li, et al. 2016b); PHLLP, CDK6, REDD1, MTA3, PRL-3, CDH1 and MAT1A (Chen, et al. 2017b)</td>
<td>Primarily functions as a tumor suppressor, but also acts as an oncogene (Chen et al. 2017b)</td>
</tr>
<tr>
<td>miR-525* = miR-525-3p</td>
<td>higher in malignant versus nonmalignant PCa tissue (Schaefer et al. 2010);</td>
<td>ARRB1 and TXN1 (Kraemer, et al. 2013); ZNF395 (Kraemer et al. 2013)</td>
<td></td>
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<tr>
<td>miR-543</td>
<td>upregulation in PCa is associated with metastasis (Massillo et al. 2017)</td>
<td>RKIP in PCa cells (Du, et al. 2017)</td>
<td></td>
</tr>
<tr>
<td>miR-590-3p</td>
<td>upregulation in PCa is associated with metastasis (Massillo et al. 2017)</td>
<td>Oncogenic in colon cancer cells by inhibiting WIF1 and DKK1 (Feng, et al. 2017); Tumor suppressor in HCC by inhibiting TEAD1 (Ge and Gong 2017); Has both oncogenic and tumor suppressor activity in different cancers</td>
<td></td>
</tr>
<tr>
<td>miR-663</td>
<td>upregulated in breast tumors (Dvinge et al. 2013) and in chemoresistant BCa cells (Hu, et al. 2013); upregulated in CRPCa tissues (Jiao, et al. 2014); Upregulated in metastatic PCa tumors (Sadeghi, et al. 2016); lower in PTC (Wang, et al. 2016c)</td>
<td>HSPG2 (Hu et al. 2013); CDKN1A and TP53 (Cho, et al. 2016); UQCC2 (Carden, et al. 2017)</td>
<td></td>
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<tr>
<td>miR-1228</td>
<td>miR-1228* (miR-1228-5p) was higher expression in breast tumors from women &lt; 35 yrs. in age versus women (45-65) or &gt; 65 (Pena-Chilet, et al. 2014); increased in EC (Srivastava et al. 2017)</td>
<td>MOAP1 (Yan and Zhao 2012); SCA1 (Lin, et al. 2015); MIF (Jia, et al. 2017)</td>
<td></td>
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<tr>
<td>miR-1290</td>
<td>Upregulated in breast tumors (Dvinge et al. 2013)</td>
<td>NAT1, FOXA1 (Endo, et al. 2013); NFIX (Mao, et al. 2015)</td>
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</table>

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