

Table SI. Primer sequences of investigated ncRNAs/mRNAs.

A, ncRNA primers		
RNA	Sense/antisense	Primer sequence
RT adapter		5'-CAGGTCCAGTTTTTTTTTTTTTTTTXN-3'
RNU-44	Sense	5'-GCAGGAAGGTCTTAATTAGCTCT-3'
	Antisense	5'-GTCCAGTTTTTTTTTTTTTTTTTAGTCAGT-3'
RNU-48	Sense	5'-TCACCGCAGCGCTCT-3'
	Antisense	5'-TCCAGTTTTTTTTTTTTTTTTTGGTCA-3'
ath-miR-159a	Sense	5'-GCGCAGTTTGGATTGAAG-3'
	Antisense	5'-AGGTCCAGTTTTTTTTTTTTTTAGAG-3'
cel-miR-39-3p	Sense	5'-GTCACCGGGTGTAATCAG-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTCAAG-3'
hsa-miR-16-5p	Sense	5'-CGCAGTAGCAGCACGTA-3'
	Antisense	5'-CAGTTTTTTTTTTTTTTTCGCCAA-3'
hsa-miR-26b-5p	Sense	5'-CGCAGTTCAAGTAATCAGGAT-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTACCT-3'
hsa-miR-191-5p	Sense	5'-CAACGGAATCCCAAAAGCA-3'
	Antisense	5'-TCCAGTTTTTTTTTTTTTTTCAGCT-3'
hsa-let-7a-5p	Sense	5'-GCAGTGAGGTAGTAGGTTG-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTAACTATAC-3'
hsa-let-7e-5p	Sense	5'-GCAGTGAGGTAGGAGGTTG-3'
	Antisense	5'-GGTCAAGTTTTTTTTTTTTTTAACTATAC-3'
hsa-miR-7-5p	Sense	5'-CGCAGTGGAAGACTAGTGA-3'
	Antisense	5'-GTCCAGTTTTTTTTTTTTTTTACAACA-3'
hsa-miR-9-5p	Sense	5'-GCAGTCTTTGGTTATCTAGCTG-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCATAC-3'
hsa-miR-15a-5p	Sense	5'-CAGTAGCAGCACATAATGGTT-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCACA-3'
hsa-miR-17-5p	Sense	5'-GCAAAGTGCTTACAGTGCA-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCTAC-3'
hsa-miR-18a-5p	Sense	5'-GTAAGGTGCATCTAGTGCAG-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCTATC-3'
hsa-miR-19b-3p	Sense	5'-AGTGTGCAAATCCATGCA-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCAGT-3'
hsa-miR-21-5p	Sense	5'-GCAGTAGCTTATCAGACTGATG-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTCAAC-3'
hsa-miR-30b-5p	Sense	5'-GCAGTGTAACATCCTACACTCA-3'
	Antisense	5'-GGTCCAGTTTTTTTTTTTTTTTAGC-3'
hsa-miR-222-3p	Sense	5'-GCAGAGCTACATCTGGCT-3'
	Antisense	5'-CCAGTTTTTTTTTTTTTTTACCAGT-3'
hsa-miR-320c	Sense	5'-CAGAAAAGCTGGGTTGAGA-3'
	Antisense	5'-GTCCAGTTTTTTTTTTTTTTTACCCT-3'
piR-hsa-36743	Sense	5'-TTTCCGTAGTGTAGTGGTCA-3'
	Antisense	5'-AGTTTTTTTTTTTTTTTGGCGAAC-3'
GlyCCC2	Sense	5'-TCAATCCCGGCCAATG-3'
	Antisense	5'-GTCCAGTTTTTTTTTTTTTTTGGTG-3'

## B, mRNA primers

RNA	Sense/antisense	Primer sequence
RT adapter		5'-(T)12VN-3'
ALAS1	Sense	5'-AGCGCAACGTCAAACCTCAT-3'
	Antisense	5'-TTTTAGCAGCATCTGCAACC-3'
Cyclin D1	Sense	5'-GGGTTGTGCTACAGATGATAGAG-3'
	Antisense	5'-AGACGCCTCCTTTGTGTTAAT-3'
TOP2 $\alpha$	Sense	5'-GACGCTTCGTTATGGGAAGATA-3'
	Antisense	5'-GGGCCAGTTGTGATGGATAA-3'

Table SI. Continued.

RNA	Sense/antisense	Primer sequence
TPX2	Sense	5'-GGCCTTTCTGGTTCTCTAGTT-3'
	Antisense	5'-CTTCTACCTCAGCCATTCTCTTC-3'
DDX5	Sense	5'-CCAACAGGGACTTACCAGAATG-3'
	Antisense	5'-CAGCTGCAGTAGCAGGATATG-3'
DDX17	Sense	5'-TCAGCCAACAATCCCAATCT-3'
	Antisense	5'-CCAGCTCTATCGGTTTCACTAC-3'

ncRNA, non-coding RNA; RT, reverse transcription; miR, microRNA; piR, PIWI-interacting RNA; ALAS1, 5'-aminolevulinate synthase 1; TOP2 $\alpha$ , DNA topoisomerase 2 $\alpha$ ; TPX2, targeting protein for Xklp2; DDX, DEAD-box polypeptide; hsa, *Homo sapiens*; cel, *Caenorhabditis elegans*; ath, *Arabidopsis thaliana*.

Table SII. Chemotherapy-driven alterations of ncRNA expression in four different BC cell lines (multivariable analysis).

Variable	hsa-miR-let7a	hsa-miR-let7e	hsa-miR-7	hsa-miR-9	hsa-miR-15a	hsa-miR-17	hsa-miR-18a
Intercept†	1.038 (0.743, 1.451)	0.776 (0.556, 1.083)	0.069 (0.050, 0.097)	0.017 (0.012, 0.023)	0.012 (0.008, 0.018)	1.029 (0.877, 1.207)	0.654 (0.493, 0.869)
Control							
BT-474	0.890 (0.555, 1.429); P=0.631	0.770 (0.480, 1.233); P=0.280	0.158 (0.098, 0.253); P<0.001	2.060 (1.297, 3.272); P=0.003	1.164 (0.635, 2.131); P=0.625	0.467 (0.373, 0.585); P<0.001	0.399 (0.267, 0.597); P<0.001
HS-578T	3.108 (1.936, 4.988); P<0.001	2.839 (1.772, 4.550); P<0.001	0.159 (0.099, 0.254); P<0.001	0.096 (0.060, 0.152); P<0.001	0.191 (0.104, 0.350); P<0.001	0.214 (0.171, 0.268); P<0.001	0.122 (0.082, 0.182); P<0.001
MDA-MB-231	2.143 (1.335, 3.440); P=0.002	2.070 (1.291, 3.317); P=0.003	0.117 (0.073, 0.187); P<0.001	0.121 (0.076, 0.192); P<0.001	0.528 (0.288, 0.966); P=0.042	0.357 (0.285, 0.448); P<0.001	0.196 (0.131, 0.293); P<0.001
Carboplatin							
BT-20	1.034 (0.644, 1.659); P=0.891	1.115 (0.696, 1.787); P=0.652	0.916 (0.572, 1.467); P=0.716	1.022 (0.644, 1.623); P=0.926	0.977 (0.533, 1.789); P=0.940	0.962 (0.767, 1.205); P=0.734	0.937 (0.627, 1.401); P=0.752
BT-474	1.030 (0.642, 1.654); P=0.902	1.014 (0.633, 1.625); P=0.955	0.965 (0.603, 1.546); P=0.884	0.918 (0.578, 1.458); P=0.718	0.926 (0.505, 1.695); P=0.803	1.025 (0.818, 1.285); P=0.830	1.030 (0.689, 1.539); P=0.886
HS-578T	0.940 (0.585, 1.508); P=0.797	0.906 (0.565, 1.451); P=0.681	1.091 (0.681, 1.748); P=0.717	1.260 (0.793, 2.001); P=0.332	1.310 (0.716, 2.400); P=0.384	1.083 (0.864, 1.357); P=0.492	1.371 (0.917, 2.050); P=0.127
MDA-MB-231	0.790 (0.492, 1.269); P=0.333	0.779 (0.486, 1.249); P=0.303	0.941 (0.587, 1.507); P=0.801	0.909 (0.572, 1.443); P=0.686	0.991 (0.541, 1.814); P=0.976	0.960 (0.766, 1.203); P=0.724	0.875 (0.585, 1.307); P=0.516
Epirubicin							
BT-20	0.745 (0.464, 1.195); P=0.225	0.811 (0.506, 1.299); P=0.386	0.548 (0.342, 0.878); P=0.015	0.640 (0.403, 1.016); P=0.063	0.496 (0.271, 0.909); P=0.026	0.527 (0.421, 0.661); P<0.001	0.402 (0.269, 0.600); P<0.001
BT-474	0.756 (0.471, 1.213); P=0.250	0.759 (0.473, 1.216); P=0.254	0.313 (0.196, 0.502); P<0.001	0.349 (0.219, 0.554); P<0.001	0.322 (0.176, 0.589); P<0.001	0.427 (0.341, 0.536); P<0.001	0.278 (0.186, 0.415); P<0.001
HS-578T	0.825 (0.514, 1.325); P=0.429	0.829 (0.517, 1.329); P=0.439	0.667 (0.417, 1.069); P=0.097	0.794 (0.500, 1.261); P=0.332	0.874 (0.477, 1.600); P=0.663	0.701 (0.559, 0.878); P=0.003	0.645 (0.431, 0.963); P=0.035
MDA-MB-231	0.681 (0.424, 1.093); P=0.116	0.723 (0.451, 1.159); P=0.181	0.357 (0.223, 0.572); P<0.001	0.500 (0.315, 0.794); P=0.005	0.523 (0.285, 0.957); P=0.039	(0.461, 0.725); P<0.001	0.462 (0.309, 0.691); P<0.001
Gemcitabine							
BT-20	0.917 (0.571, 1.472); P=0.720	0.892 (0.556, 1.429); P=0.635	0.677 (0.423, 1.084); P=0.109	0.963 (0.606, 1.529); P=0.873	0.779 (0.425, 1.426); P=0.420	0.756 (0.603, 0.948); P=0.018	0.648 (0.433, 0.968); P=0.037
BT-474	0.854 (0.532, 1.370); P=0.514	0.906 (0.565, 1.452); P=0.682	0.359 (0.224, 0.575); P<0.001	0.239 (0.150, 0.379); P<0.001	0.228 (0.124, 0.417); P<0.001	0.387 (0.308, 0.485); P<0.001	0.206 (0.138, 0.308); P<0.001
HS-578T	0.929 (0.579, 1.491); P=0.760	0.887 (0.553, 1.421); P=0.619	0.909 (0.567, 1.455); P=0.691	1.000 (0.630, 1.588); P>0.999	1.145 (0.625, 2.096); P=0.663	1.076 (0.858, 1.348); P=0.529	1.132 (0.757, 1.692); P=0.548
MDA-MB-231	0.920 (0.573, 1.476); P=0.730	0.890 (0.556, 1.427); P=0.630	0.574 (0.359, 0.920); P=0.024	0.794 (0.500, 1.261); P=0.332	0.894 (0.488, 1.637); P=0.717	0.870 (0.694, 1.091); P=0.231	0.773 (0.517, 1.156); P=0.213

Table SII. Continued.

Variable	hsa-miR-let7a	hsa-miR-let7e	hsa-miR-7	hsa-miR-9	hsa-miR-15a	hsa-miR-17	hsa-miR-18a
Paclitaxel							
BT-20	1.081 (0.673, 1.735); P=0.749	1.068 (0.666, 1.711); P=0.787	0.789 (0.493, 1.264); P=0.328	0.846 (0.533, 1.343); P=0.481	0.639 (0.349, 1.170); P=0.152	0.679 (0.541, 0.850); P=0.001	0.562 (0.376, 0.839); P=0.006
BT-474	0.961 (0.599, 1.543); P=0.870	0.981 (0.612, 1.572); P=0.936	0.825 (0.515, 1.321); P=0.425	0.752 (0.474, 1.195); P=0.233	0.693 (0.378, 1.269); P=0.239	0.763 (0.609, 0.956); P=0.021	0.714 (0.478, 1.068); P=0.105
HS-578T	0.932 (0.581, 1.496); P=0.771	0.928 (0.579, 1.487); P=0.756	1.152 (0.719, 1.845); P=0.559	1.000 (0.630, 1.588); P>0.999	1.000 (0.546, 1.831); P>0.999	0.802 (0.640, 1.006); P=0.059	0.780 (0.522, 1.167); P=0.230
MDA-MB-231	0.540 (0.336, 0.866); P=0.013	0.582 (0.363, 0.933); P=0.027	0.610 (0.381, 0.978); P=0.044	0.500 (0.315, 0.794); P=0.005	0.492 (0.269, 0.901); P=0.025	0.586 (0.468, 0.735); P<0.001	0.447 (0.299, 0.667); P<0.001
Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
Intercept†	1.116 (0.714, 1.745)	0.418 (0.324, 0.538)	0.219 (0.168, 0.285)	0.081 (0.069, 0.095)	0.020 (0.015, 0.027)	0.010 (0.007, 0.013)	0.008 (0.005, 0.012)
Control							
BT-474	0.466 (0.247, 0.876); P=0.020	1.194 (0.834, 1.710); P=0.336	1.093 (0.753, 1.586); P=0.642	0.472 (0.376, 0.592); P<0.001	0.349 (0.224, 0.543); P<0.001	1.302 (0.858, 1.976); P=0.219	5.215 (2.963, 9.179); P<0.001
HS-578T	0.123 (0.066, 0.232); P<0.001	4.509 (3.148, 6.458); P<0.001	0.720 (0.496, 1.045); P=0.088	0.830 (0.661, 1.041); P=0.111	1.367 (0.879, 2.127); P=0.169	0.554 (0.365, 0.840); P=0.007	1.658 (0.942, 2.919); P=0.083
MDA-MB-231	0.141 (0.075, 0.265); P<0.001	1.840 (1.285, 2.636); P=0.001	0.812 (0.559, 1.179); P=0.276	1.289 (1.027, 1.618); P=0.031	0.642 (0.413, 0.999); P=0.053	3.645 (2.402, 5.533); P<0.001	1.726 (0.981, 3.038); P=0.062
Carboplatin							
BT-20	0.933 (0.496, 1.756); P=0.830	0.890 (0.621, 1.274); P=0.526	0.977 (0.673, 1.419); P=0.903	1.029 (0.820, 1.291); P=0.805	1.036 (0.666, 1.611); P=0.877	0.965 (0.636, 1.465); P=0.869	0.860 (0.489, 1.514); P=0.603
BT-474	1.097 (0.583, 2.064); P=0.775	0.856 (0.598, 1.226); P=0.399	0.904 (0.623, 1.313); P=0.598	0.986 (0.786, 1.237); P=0.903	1.197 (0.769, 1.862); P=0.428	1.222 (0.805, 1.856); P=0.348	1.077 (0.612, 1.896); P=0.798
HS-578T	1.041 (0.553, 1.960); P=0.900	1.097 (0.766, 1.571); P=0.615	1.045 (0.720, 1.518); P=0.817	0.935 (0.745, 1.173); P=0.561	0.914 (0.588, 1.422); P=0.691	1.240 (0.817, 1.882); P=0.316	0.905 (0.514, 1.593); P=0.730
MDA-MB-231	0.865 (0.459, 1.627); P=0.654	0.811 (0.566, 1.162); P=0.258	0.921 (0.634, 1.337); P=0.665	0.894 (0.713, 1.122); P=0.338	0.907 (0.583, 1.411); P=0.667	0.989 (0.652, 1.501); P=0.959	0.632 (0.359, 1.113); P=0.116
Epirubicin							
BT-20	0.354 (0.188, 0.666); P=0.002	0.461 (0.322, 0.660); P<0.001	0.566 (0.390, 0.822); P=0.004	0.608 (0.484, 0.763); P<0.001	0.716 (0.461, 1.114); P=0.143	0.990 (0.652, 1.502); P=0.962	0.489 (0.278, 0.861); P=0.015
BT-474	0.254 (0.135, 0.479); P<0.001	0.438 (0.306, 0.628); P<0.001	0.361 (0.249, 0.524); P<0.001	0.718 (0.572, 0.901); P=0.005	1.151 (0.740, 1.790); P=0.535	4.098 (2.700, 6.221); P<0.001	0.843 (0.479, 1.484); P=0.556
HS-578T	0.571 (0.303, 1.075); P=0.086	0.761 (0.531, 1.090); P=0.140	0.719 (0.495, 1.044); P=0.087	0.849 (0.677, 1.066); P=0.163	0.857 (0.551, 1.334); P=0.497	1.310 (0.863, 1.989); P=0.208	0.772 (0.438, 1.358); P=0.372
MDA-MB-231	0.384 (0.204, 0.724); P=0.004	0.304 (0.212, 0.436); P<0.001	0.468 (0.323, 0.680); P<0.001	0.547 (0.436, 0.686); P<0.001	0.997 (0.641, 1.551); P=0.989	0.547 (0.360, 0.830); P=0.006	0.398 (0.226, 0.701); P=0.002

Table SII. Continued.

Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
Gemcitabine							
BT-20	0.584 (0.310, 1.099); P=0.099	0.653 (0.456, 0.936); P=0.023	0.783 (0.539, 1.136); P=0.201	0.835 (0.665, 1.048); P=0.123	0.814 (0.523, 1.267); P=0.365	0.961 (0.633, 1.459); P=0.854	0.687 (0.390, 1.210); P=0.197
BT-474	0.192 (0.102, 0.362); P<0.001	0.290 (0.202, 0.415); P<0.001	0.281 (0.193, 0.408); P<0.001	0.819 (0.652, 1.027); P=0.088	2.000 (1.286, 3.111); P=0.003	10.707 (7.054, 16.251); P<0.001	2.062 (1.171, 3.630); P=0.014
HS-578T	0.823 (0.438, 1.550); P=0.549	1.100 (0.768, 1.575); P=0.606	0.992 (0.683, 1.440); P=0.966	0.922 (0.735, 1.157); P=0.486	0.969 (0.623, 1.507); P=0.888	0.685 (0.451, 1.040); P=0.079	0.748 (0.425, 1.316); P=0.316
MDA-MB-231	0.643 (0.342, 1.210); P=0.175	0.653 (0.456, 0.936); P=0.023	0.879 (0.605, 1.276); P=0.499	0.856 (0.682, 1.074); P=0.183	1.164 (0.749, 1.811); P=0.502	1.172 (0.772, 1.779); P=0.458	0.693 (0.394, 1.220); P=0.208
Paclitaxel							
BT-20	0.469 (0.249, 0.882); P=0.021	0.661 (0.462, 0.947); P=0.027	0.803 (0.553, 1.166); P=0.253	1.172 (0.934, 1.470); P=0.175	1.104 (0.710, 1.717); P=0.663	1.899 (1.251, 2.883); P=0.003	0.687 (0.390, 1.210); P=0.197
BT-474	0.660 (0.351, 1.242); P=0.201	0.804 (0.561, 1.151); P=0.237	0.696 (0.479, 1.010); P=0.060	0.905 (0.721, 1.136); P=0.392	1.145 (0.736, 1.781); P=0.550	1.360 (0.896, 2.064); P=0.153	0.774 (0.440, 1.362); P=0.377
HS-578T	0.644 (0.342, 1.212); P=0.177	1.003 (0.701, 1.437); P=0.985	0.740 (0.510, 1.075); P=0.118	1.220 (0.972, 1.531); P=0.090	0.874 (0.562, 1.360); P=0.552	1.793 (1.181, 2.721); P=0.008	0.701 (0.398, 1.234); P=0.222
MDA-MB-231	0.361 (0.192, 0.680); P=0.002	0.412 (0.287, 0.589); P<0.001	0.405 (0.279, 0.588); P<0.001	0.783 (0.624, 0.983); P=0.038	1.168 (0.751, 1.816); P=0.493	2.922 (1.925, 4.435); P<0.001	0.772 (0.438, 1.358); P=0.372

Entries represent regression coefficients, and the lower and upper limits of their 95% confidence intervals. P-values refer to the statistical significance of the impact of the variable in the row to the endpoint in the column. P<0.05 indicates a statistically significant difference. BC, breast cancer; ncRNA, non-coding RNA; miR, microRNA; piR, piRNA-interacting RNA.

Table SIII. Chemotherapy-driven alterations of secreted microvesicular ncRNA expression levels in four different BC cell lines (multivariable analysis).

A, Main effects of cell line and two-way interactions							
Variable	hsa-miR-let7a	hsa-miR-let7e	hsa-miR-7	hsa-miR-9	hsa-miR-15a	hsa-miR-17	hsa-miR-18a
Intercept† Control (extra.)	1.038 (0.743, 1.451)	0.776 (0.556, 1.083)	0.069 (0.050, 0.097)	0.017 (0.012, 0.023)	0.012 (0.008, 0.018)	1.029 (0.877, 1.207)	0.654 (0.493, 0.869)
BT-20	5.307 (3.306, 8.520); P<0.001	6.066 (3.785, 9.722); P<0.001	5.908 (3.689, 9.464); P<0.001	0.668 (0.420, 1.060); P=0.092	11.442 (6.248, 20.953); P<0.001	3.524 (2.812, 4.417); P<0.001	3.919 (2.622, 5.857); P<0.001
BT-474	10.367 (6.458, 16.642); P<0.001	16.873 (10.529, 27.040); P<0.001	68.780 (42.940, 110.171); P<0.001	1.162 (0.732, 1.84); P=0.526	1.735 (0.947, 3.177); P=0.079	5.858 (4.674, 7.341); P<0.001	5.002 (3.347, 7.477); P<0.001
HS-578T	3.757 (2.340, 6.031); P<0.001	5.437 (3.393, 8.7139); P<0.001	19.584 (12.226, 31.369); P<0.001	NA	19.601 (10.703, 35.895); P<0.001	2.997 (2.391, 3.756); P<0.001	8.127 (5.438, 12.147); P<0.001
MDA-MB-231	1.291 (0.804, 2.072); P=0.294	1.315 (0.820, 2.107); P=0.259	NA	NA	NA	2.716 (2.167, 3.404); P<0.001	4.352 (2.912, 6.505); P<0.001
Treatment (extra.)							
Carboplatin	1.354 (0.693, 2.644); P=0.378	1.351 (0.694, 2.633); P=0.379	1.136 (0.583, 2.211); P=0.709	1.649 (0.857, 3.171); P=0.139	0.654 (0.278, 1.538); P=0.334	0.745 (0.541, 1.025); P=0.074	0.970 (0.549, 1.712); P=0.915
Epirubicin	2.781 (1.424, 5.431); P=0.004	2.518 (1.293, 4.907); P=0.008	1.722 (0.885, 3.353); P=0.114	2.066 (1.074, 3.975); P=0.034	1.134 (0.482, 2.667); P=0.775	1.298 (0.943, 1.786); P=0.113	2.013 (1.140, 3.554); P=0.018
Gemcitabine	2.384 (1.221, 4.656); P=0.013	2.646 (1.358, 5.154); P=0.005	1.571 (0.807, 3.058); P=0.188	1.956 (1.017, 3.763); P=0.049	0.595 (0.253, 1.400); P=0.239	0.851 (0.619, 1.172); P=0.327	1.108 (0.628, 1.956); P=0.724
Paclitaxel	1.947 (0.997, 3.803); P=0.055	2.112 (1.084, 4.116); P=0.031	1.184 (0.608, 2.306); P=0.621	3.036 (1.578, 5.840); P=0.002	0.994 (0.422, 2.338); P=0.989	0.740 (0.538, 1.019); P=0.068	1.083 (0.614, 1.913); P=0.783
B, Three-way interactions							
Variable	hsa-miR-let7a	hsa-miR-let7e	hsa-miR-7	hsa-miR-9	hsa-miR-15a	hsa-miR-17	hsa-miR-18a
Carboplatin (extra.)							
BT-474	0.700 (0.272, 1.805); P=0.463	0.817 (0.318, 2.099); P=0.676	1.053 (0.410, 2.701); P=0.915	0.518 (0.206, 1.308); P=0.169	1.565 (0.467, 5.250); P=0.470	1.253 (0.798, 1.969); P=0.330	0.992 (0.444, 2.216); P=0.985
HS-578T	0.993 (0.385, 2.558); P=0.988	1.010 (0.393, 2.595); P=0.983	1.477 (0.576, 3.790); P=0.420	NA	0.534 (0.159, 1.790); P=0.313	1.008 (0.642, 1.583); P=0.972	0.710 (0.318, 1.586); P=0.406
MDA-MB-231	1.670 (0.648, 4.302); P=0.292	1.752 (0.682, 4.499); P=0.248	NA	NA	NA	1.199 (0.763, 1.882); P=0.434	0.930 (0.416, 2.078); P=0.860
Epirubicin (extra.)							
BT-474	0.573 (0.222, 1.477); P=0.252	0.633 (0.247, 1.627); P=0.346	0.577 (0.225, 1.480); P=0.256	0.907 (0.360, 2.289); P=0.838	6.349 (1.893, 21.294); P=0.004	1.627 (1.036, 2.556); P=0.038	1.772 (0.793, 3.958); P=0.167
HS-578T	0.852 (0.331, 2.196); P=0.742	0.882 (0.344, 2.266); P=0.795	0.866 (0.338, 2.223); P=0.766	NA	0.389 (0.116, 1.305); P=0.131	0.993 (0.632, 1.559); P=0.975	0.700 (0.313, 1.564); P=0.387

Table SIII. Continued.

Variable	hsa-miR-let7a	hsa-miR-let7e	hsa-miR-7	hsa-miR-9	hsa-miR-15a	hsa-miR-17	hsa-miR-18a
MDA-MB-231	0.782 (0.303, 2.015); P=0.612	0.806 (0.314, 2.070); P=0.655	NA	NA	NA	1.201 (0.764, 1.886); P=0.430	0.840 (0.376, 1.877); P=0.673
Gemcitabine (extra.)							
BT-474	0.507 (0.197, 1.306); P=0.163	0.439 (0.171, 1.126); P=0.091	0.548 (0.214, 1.406); P=0.215	1.472 (0.584, 3.713); P=0.416	17.930 (5.346, 60.135); P<0.001	2.959 (1.884, 4.648); P<0.001	4.968 (2.224, 11.099); P<0.001
HS-578T	0.357 (0.139, 0.920); P=0.036	0.337 (0.131, 0.866); P=0.027	2.280 (0.889, 5.851); P=0.091	NA	1.372 (0.394, 4.778); P=0.620	0.743 (0.473, 1.168); P=0.202	0.314 (0.141, 0.701); P=0.006
MDA-MB-231	0.523 (0.203, 1.348); P=0.183	0.485 (0.189, 1.245); P=0.136	NA	NA	NA	1.168 (0.744, 1.835); P=0.502	1.230 (0.550, 2.747); P=0.616
Paclitaxel (extra.)							
BT-474	0.742 (0.288, 1.913); P=0.539	0.672 (0.262, 1.726); P=0.411	0.668 (0.260, 1.714); P=0.404	0.332 (0.132, 0.837); P=0.023	2.133 (0.636, 7.152); P=0.224	1.549 (0.987, 2.434); P=0.061	1.120 (0.501, 2.503); P=0.783
HS-578T	0.590 (0.229, 1.521); P=0.278	0.559 (0.218, 1.437); P=0.231	0.620 (0.242, 1.591); P=0.323	NA	0.975 (0.291, 3.268); P=0.967	1.419 (0.903, 2.229); P=0.133	0.982 (0.440, 2.194); P=0.965
MDA-MB-231	1.360 (0.528, 3.504); P=0.526	1.069 (0.416, 2.746); P=0.890	NA	NA	NA	2.887 (1.838, 4.535); P<0.001	2.009 (0.899, 4.489); P=0.093

Table SIII (continued).

## A, Main effects of cell line and two-way interactions

Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
Intercept†	1.116 (0.714, 1.745)	0.418 (0.324, 0.538)	0.219 (0.168, 0.285)	0.081 (0.069, 0.095)	0.020 (0.015, 0.027)	0.010 (0.007, 0.013)	0.008 (0.005, 0.012)
Control (extra.)							
BT-20	1.389 (0.738, 2.614); P=0.312	10.375 (7.244, 14.860); P<0.001	1.019 (0.702, 1.480); P=0.921	12.308 (9.808, 15.445); P<0.001	87.474 (56.235, 136.067); P<0.001	88.704 (58.440, 134.641); P<0.001	4.642 (2.637, 8.170); P<0.001
BT-474	4.566 (2.426, 8.594); P<0.001	4.639 (3.239, 6.644); P<0.001	1.405 (0.967, 2.039); P=0.078	13.459 (10.726, 16.889); P<0.001	226.237 (145.443, 351.914); P<0.001	30.044 (19.794, 45.604); P<0.001	6.075 (3.451, 10.693); P<0.001
HS-578T	1.215 (0.645, 2.286); P=0.548	10.170 (7.100, 14.566); P<0.001	0.974 (0.671, 1.414); P=0.890	25.962 (20.689, 32.578); P<0.001	26.118 (16.790, 40.626); P<0.001	7.828 (5.158, 11.883); P<0.001	11.634 (6.609, 20.479); P<0.001
MDA-MB-231	3.339 (1.774, 6.285); P<0.001	7.719 (5.389, 11.056); P<0.001	1.105 (0.761, 1.604); P=0.602	12.954 (10.323, 16.255); P<0.001	21.684 (13.940, 33.730); P<0.001	2.420 (1.594, 3.674); P<0.001	10.645 (6.048, 18.738); P<0.001
Treatment (extra.)							
Carboplatin	0.481 (0.197, 1.177); P=0.113	1.378 (0.829, 2.291); P=0.219	0.856 (0.505, 1.451); P=0.565	0.929 (0.674, 1.280); P=0.653	1.485 (0.795, 2.774); P=0.218	0.798 (0.443, 1.441); P=0.457	0.722 (0.325, 1.607); P=0.428



Table SIII. C continued.

Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
Epirubicin	1.921 (0.786, 4.699); P=0.156	2.106 (1.267, 3.501); P=0.005	1.966 (1.160, 3.331); P=0.014	1.145 (0.831, 1.579); P=0.411	1.455 (0.779, 2.718); P=0.243	0.638 (0.354, 1.151); P=0.139	0.710 (0.319, 1.579); P=0.404
Gemcitabine	0.642 (0.263, 1.571); P=0.335	1.583 (0.952, 2.631); P=0.080	0.923 (0.545, 1.564); P=0.768	1.078 (0.782, 1.487); P=0.646	2.016 (1.079, 3.765); P=0.031	0.564 (0.313, 1.018); P=0.061	0.834 (0.375, 1.855); P=0.657
Paclitaxel	1.502 (0.614, 3.672); P=0.376	1.146 (0.689, 1.904); P=0.601	1.992 (1.176, 3.375); P=0.012	0.625 (0.453, 0.861); P=0.005	0.682 (0.365, 1.273); P=0.233	0.248 (0.137, 0.447); P<0.001	0.718 (0.323, 1.597); P=0.419
<b>B, Three-way interactions</b>							
Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
<b>Carboplatin (extra.)</b>							
BT-474	1.890 (0.533, 6.694); P=0.327	0.891 (0.434, 1.829); P=0.755	1.172 (0.556, 2.471); P=0.678	1.157 (0.735, 1.821); P=0.53	0.578 (0.239, 1.399); P=0.228	1.077 (0.467, 2.480); P=0.863	1.511 (0.488, 4.681); P=0.476
HS-578T	1.235 (0.349, 4.373); P=0.745	0.737 (0.359, 1.512); P=0.408	0.901 (0.427, 1.899); P=0.785	1.149 (0.730, 1.810); P=0.550	1.073 (0.444, 2.597); P=0.875	2.005 (0.870, 4.620); P=0.106	1.169 (0.377, 3.623); P=0.787
MDA-MB-231	1.143 (0.323, 4.048); P=0.837	1.194 (0.582, 2.449); P=0.630	0.728 (0.345, 1.535); P=0.407	0.806 (0.512, 1.269); P=0.353	1.149 (0.475, 2.780); P=0.759	0.910 (0.395, 2.096); P=0.825	0.770 (0.248, 2.385); P=0.651
<b>Epirubicin (extra.)</b>							
BT-474	3.238 (0.914, 11.470); P=0.072	1.295 (0.631, 2.657); P=0.482	3.667 (1.740, 7.730); P=0.001	0.679 (0.431, 1.070); P=0.099	0.307 (0.127, 0.744); P=0.011	0.359 (0.156, 0.827); P=0.018	3.010 (0.971, 9.325); P=0.060
HS-578T	0.482 (0.136, 1.707); P=0.261	0.682 (0.332, 1.399); P=0.299	0.689 (0.327, 1.453); P=0.331	0.793 (0.503, 1.248); P=0.319	1.059 (0.437, 2.561); P=0.900	2.662 (1.156, 6.134); P=0.024	1.422 (0.459, 4.406); P=0.543
MDA-MB-231	0.368 (0.104, 1.305); P=0.126	2.311 (1.127, 4.741); P=0.025	0.745 (0.353, 1.569); P=0.440	1.601 (1.017, 2.521); P=0.046	1.379 (0.570, 3.336); P=0.478	2.096 (0.910, 4.829); P=0.086	2.851 (0.920, 8.832); P=0.073
<b>Gemcitabine (extra.)</b>							
BT-474	13.483 (3.806, 47.760); P<0.001	2.549 (1.243, 5.230); P=0.013	9.023 (4.281, 19.019); P<0.001	0.721 (0.458, 1.136); P=0.162	0.127 (0.052, 0.307); P<0.001	0.178 (0.077, 0.409); P<0.001	1.709 (0.551, 5.294); P=0.356
HS-578T	1.492 (0.405, 5.495); P=0.549	0.443 (0.216, 0.909); P=0.029	0.516 (0.245, 1.088); P=0.086	0.901 (0.572, 1.419); P=0.653	0.758 (0.313, 1.833); P=0.540	6.318 (2.742, 14.556); P<0.001	2.390 (0.772, 7.406); P=0.135
MDA-MB-231	1.765 (0.498, 6.254); P=0.381	1.245 (0.607, 2.554); P=0.551	1.287 (0.610, 2.712); P=0.509	0.777 (0.494, 1.224); P=0.280	0.490 (0.203, 1.186); P=0.118	1.940 (0.842, 4.469); P=0.124	1.297 (0.419, 4.020); P=0.653
<b>Paclitaxel (extra.)</b>							
BT-474	0.824 (0.233, 2.919); P=0.765	1.148 (0.560, 2.356); P=0.707	0.945 (0.448, 1.992); P=0.882	1.550 (0.984, 2.441); P=0.062	1.119 (0.462, 2.707); P=0.804	1.831 (0.795, 4.219); P=0.159	1.029 (0.332, 3.187); P=0.961
HS-578T	1.308 (0.369, 4.633); P=0.679	0.741 (0.361, 1.521); P=0.417	0.972 (0.461, 2.049); P=0.941	1.068 (0.678, 1.681); P=0.778	1.999 (0.826, 4.836); P=0.128	3.492 (1.516, 8.045); P=0.004	1.840 (0.594, 5.701); P=0.294



Table SIII. Continued.

Variable	hsa-miR-19b	hsa-miR-21	hsa-miR-30b	hsa-miR-222	hsa-miR-320c	piR-36743	GlyCCC2
MDA-MB-231	3.965 (1.119, 14.046); P=0.036	1.325 (0.646, 2.719); P=0.445	1.198 (0.568, 2.525); P=0.637	0.882 (0.560, 1.389); P=0.589	0.912 (0.377, 2.208); P=0.839	2.428 (1.054, 5.593); P=0.040	0.277 (0.089, 0.859); P=0.029

Entries represent regression coefficients, and the lower and upper limits of their 95% confidence intervals. P-values refer to the statistical significance of the impact of the variable in the row to the endpoint in the column. P<0.05 indicates a statistically significant difference. Extra, extracellular; NA, no reliably detectable ncRNA expression; BC, breast cancer; ncRNA, non-coding RNA; miR, microRNA; piR, PIWI-interacting RNA.

Table SIV. Chemotherapy-driven alterations of mRNA expression in four different BC cell lines (multivariable analysis).

Variable	DDX5	DDX17	Cyclin D1	TOP2 $\alpha$	TPX2
Intercept†	4.326 (3.049, 5.603)	0.839 (0.763, 0.914)	0.191 (-0.301, 0.683)	1.518 (1.324, 1.713)	1.001 (0.904, 1.098)
Control					
BT-474	0.464 (-1.342, 2.270); P=0.617	-0.192 (-0.299, -0.085); P=0.001	1.672 (0.976, 2.368); P<0.001	0.935 (0.660, 1.210); P<0.001	0.188 (0.051, 0.325); P=0.010
HS-578T	-0.153 (-1.959, 1.652); P=0.869	0.064 (-0.043, 0.170); P=0.248	2.897 (2.201, 3.593); P<0.001	0.359 (0.084, 0.634); P=0.014	-0.067 (-0.204, 0.070); P=0.346
MDA-MB-231	1.792 (-0.013, 3.598); P=0.059	-0.379 (0.486, 0.273); P<0.001	1.455 (0.760, 2.151); P<0.001	0.582 (0.307, 0.857); P<0.001	0.415 (0.278, 0.552); P<0.001
Carboplatin					
BT-20	-0.080 (-1.886, 1.725); P=0.931	0.082 (-0.024, 0.189); P=0.138	0.032 (-0.663, 0.728); P=0.928	0.059 (-0.216, 0.334); P=0.678	0.000 (-0.137, 0.137); P>0.999
BT-474	-0.627 (-2.433, 1.179); P=0.500	-0.040 (-0.147, 0.066); P=0.462	-0.087 (-0.783, 0.608); P=0.807	-0.178 (-0.453, 0.097); P=0.213	-0.068 (-0.205, 0.069); P=0.339
HS-578T	-0.503 (-2.309, 1.303); P=0.588	-0.133 (-0.240, -0.027); P=0.019	-0.522 (-1.217, 0.174); P=0.149	-0.296 (-0.571, -0.021); P=0.041	-0.107 (-0.244, 0.030); P=0.134
MDA-MB-231	0.001 (-1.805, 1.807); P=0.999	0.068 (-0.039, 0.175); P=0.218	0.129 (-0.567, 0.825); P=0.718	-0.051 (-0.326, 0.224); P=0.720	-0.123 (-0.260, 0.014); P=0.087
Epirubicin					
BT-20	4.402 (2.597, 6.208); P<0.001	-0.740 (-0.846, -0.633); P<0.001	0.002 (-0.694, 0.697); P=0.996	-0.249 (-0.524, 0.026); P=0.083	-0.502 (-0.639, -0.365); P<0.001
BT-474	0.283 (-1.523, 2.088); P=0.761	-0.502 (-0.609, -0.395); P<0.001	-1.364 (-2.060, -0.668); P<0.001	-1.277 (-1.552, -1.002); P<0.001	-0.128 (-0.265, 0.009); P=0.075
HS-578T	1.463 (-0.343, 3.269); P=0.120	-0.254 (-0.361, -0.148); P<0.001	-0.960 (-1.656, -0.265); P=0.010	-0.980 (-1.255, -0.705); P<0.001	-0.580 (-0.717, -0.443); P<0.001
MDA-MB-231	6.693 (4.887, 8.498); P<0.001	-0.257 (-0.363, -0.150); P<0.001	0.050 (-0.646, 0.746); P=0.889	-0.384 (-0.659, -0.109); P=0.009	-0.473 (-0.610, -0.336); P<0.001
Gemcitabine					
BT-20	-1.075 (-2.881, 0.731); P=0.250	-0.474 (-0.581, -0.367); P<0.001	-0.034 (-0.730, 0.662); P=0.924	-0.558 (-0.833, -0.283); P<0.001	-0.481 (-0.618, -0.344); P<0.001
BT-474	-2.019 (-3.824, -0.213); P=0.034	-0.503 (-0.610, -0.396); P<0.001	-1.195 (-1.891, -0.499); P=0.002	-1.980 (-2.255, -1.705); P<0.001	-0.414 (-0.551, -0.277); P<0.001
HS-578T	-0.977 (-2.783, 0.829); P=0.295	-0.370 (-0.477, -0.264); P<0.001	-1.879 (-2.574, -1.183); P<0.001	-0.518 (-0.793, -0.243); P=0.001	-0.391 (-0.528, -0.254); P<0.001
MDA-MB-231	-0.627 (-2.433, 1.178); P=0.500	-0.110 (-0.217, -0.004); P=0.049	-0.893 (-1.589, -0.197); P=0.016	-0.571 (-0.846, -0.296); P<0.001	-0.413 (-0.550, -0.276); P<0.001
Paclitaxel					
BT-20	-0.588 (-2.394, 1.217); P=0.527	0.011 (-0.095, 0.118); P=0.836	-0.037 (-0.733, 0.659); P=0.917	-0.438 (-0.713, -0.163); P=0.003	-0.104 (-0.241, 0.033); P=0.146
BT-474	-1.100 (-2.905, 0.706); P=0.240	-0.099 (-0.205, 0.008); P=0.077	-0.276 (-0.971, 0.420); P=0.442	-0.529 (-0.804, -0.254); P=0.001	-0.031 (-0.168, 0.106); P=0.001
HS-578T	-0.180 (-1.985, 1.626); P=0.846	-0.079 (-0.186, 0.027); P=0.152	-1.006 (-1.701, -0.310); P=0.007	-0.576 (-0.851, -0.301); P<0.001	0.253 (0.116, 0.390); P<0.001
MDA-MB-231	-0.968 (-2.774, 0.838); P=0.300	-0.157 (-0.263, -0.050); P=0.006 <sup>a</sup>	-0.704 (-1.399, -0.008); P=0.054	-1.158 (-1.433, -0.883); P<0.001	-0.462 (-0.599, -0.325); P<0.001

Entries represent regression coefficients, and the lower and upper limits of their 95% confidence intervals. P-values refer to the statistical significance of the impact of the variable in the row to the endpoint in the column. P<0.05 indicates a statistically significant difference. BC, breast cancer; DDX, DEAD-box polypeptide; TOP2 $\alpha$ , DNA topoisomerase 2 $\alpha$ ; TPX2, targeting protein for Xklp2.