

Pairs of genes resulting in three groups all validated in the training dataset at the  $\alpha = 0.05$  significance level - The pairs of genes which induced three sample groups which all validated in the training dataset ( $\alpha = 0.05$ ) are listed. The first column lists the first gene in the pairs and the second column lists the second genes in the pairs. The UniGene Cluster ID is provided when the gene symbol is unavailable. The pairs of genes in **bold** defined three sample groups all of which were validated at the  $\alpha = 0.05$  significance level in all three validation datasets.

<b>First gene</b>	<b>Second gene(s)</b>
Hs.512126	Hs.432677, <i>HIST1H1C</i>
Hs.512643	<i>CXCL13</i> , <i>HPN</i>
Hs.1657	Hs.64568, <i>PDZK1IP1</i> , <i>SOX10</i> , Hs.332649, <i>KRTAP10-11</i> , Hs.432677, Hs.524293, <i>GRB7</i> , <i>ABCC11</i>
<i>ESR1</i>	Hs.64568, <i>PDZK1IP1</i> , <i>KRTAP10-11</i> , Hs.524293, <i>GRB7</i> , <i>ABCC11</i> , Hs.375600
Hs.64568	Hs.432677, <i>SERPINB5</i> , Hs.530509
<b>BCMP11</b>	<i>SOX10</i> , <i>KRTAP10-11</i> , <i>PIP</i> , <b>ABCC11</b>
<i>PDZK1IP1</i>	<i>SOX10</i> , <i>SAA2</i> , Hs.54451, Hs.530509
<i>PKP1</i>	<i>SLC39A6</i> , <i>KRTAP10-11</i> , <i>LBP</i>
<i>CALML5</i>	<i>KRTAP10-11</i>
<i>CXCL13</i>	<i>CXCL1</i>
Hs.109425	<i>SOX10</i> , <i>STC2</i>
Hs.444372	<i>CHAD</i> , <i>APOD</i> , <i>CYP4Z1</i>
Hs.7413	Hs.155223, <i>STC2</i> , Hs.524293, Hs.251754
<b>SLC39A6</b>	Hs.473695, Hs.169946, <b>GATA3</b>
Hs.155956	<i>GSTT1</i>
Hs.458430	Hs.332649, <i>GSTT1</i>
Hs.405944	<i>SERPINB5</i> , <i>SILV</i>
<i>IGL@</i>	<i>SERPINB5</i>
<i>SOX10</i>	Hs.416854, Hs.155223, <i>STC2</i> , Hs.391828, <i>C1orf64</i> , <i>LBP</i> , <i>GRB7</i> , <i>TRPV6</i> , Hs.117874, <i>PCSK6</i>
<i>SAA2</i>	<i>MAOB</i>
Hs.416854	<i>ERBB2</i> , <i>PIP</i>

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Hs.458275	<i>KRT23</i>
<i>RERG</i>	<i>GRB7</i>
Hs.525874	<i>APOD</i> , Hs.75736
<i>CA12</i>	Hs.391828
Hs.279916	Hs.391828, <i>LBP</i>
<i>DNALI1</i>	<i>ERBB2</i> , <i>GRB7</i> , <i>LTF</i>
<i>CHAD</i>	<i>HIST1H1C</i> , <i>TSPAN1</i>
<i>TRIM29</i>	<i>LBP</i> , <i>KRT20</i>
<i>C1orf64</i>	<i>ERBB2</i>
<i>KRTAP10-11</i>	<i>ABCC11</i>
<i>LBP</i>	<i>TSPAN1</i> , Hs.524293, <i>SERPINB5</i>
Hs.432677	<i>PLIN</i> , <i>ERBB2</i> , <i>GRB7</i>
Hs.524438	<i>ERBB2</i> , <i>PCSK6</i>
<i>HIST1H1C</i>	<i>ERBB2</i>
<i>CYP4X1</i>	<i>TFF3</i>
<i>TSPAN1</i>	<i>SERPINA3</i> , <i>HMGCS2</i>
<i>PLIN</i>	<i>GRB7</i> , <i>SERPINB5</i> , <i>TFF3</i> , Hs.430324
Hs.524293	<i>HMGCS2</i>
<i>ERBB2</i>	<i>LTF</i> , <i>GATA3</i> , Hs.54451, Hs.530509, Hs.449587
<i>GRB7</i>	Hs.515966, <i>GATA3</i> , Hs.36563
<i>SERPINB5</i>	Hs.525647
Hs.24395	<i>FN3K</i>
<i>SILV</i>	Hs.515966
<i>LTF</i>	Hs.97774
<i>FN3K</i>	<i>AREG</i>

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<i>HPN</i>	<i>AREG</i>
<i>CCL19</i>	Hs.430324
<i>PIP</i>	<i>CACNA1H</i>
Hs.97774	<i>ABCC11</i>
<i>MAPT</i>	<i>ABCC11</i>
Hs.54451	<i>DHRS2</i>
Hs.530509	<i>DHRS2</i>
<i>TFF3</i>	<i>PCSK6</i>
Hs.430324	Hs.413924
<i>CACNA1H</i>	<i>NELL2</i> , Hs.375600, Hs.332053
<i>PCSK6</i>	<i>IGSF1</i>
<i>ABCC11</i>	Hs.525647, <i>MAOB</i>
<i>AREG</i>	<i>GRB14</i>