

S8 Table. Outlier gene list in 140 formalin-fixed paraffin-embedded lung adenocarcinoma (LUAD) samples

| Gene | Outlier types | OL \geq 7, mZ \geq 10 No. | OL \geq 7, mZ \geq 10 Frequency | Outlier from open database (LUAD) |
|-----------------|--------------------------------|-------------------------------------|---|--------------------------------------|
| <i>TM4SF4</i> | 3. Predicted membrane proteins | 18 | 0.13 | 3. Predicted membrane proteins |
| <i>MUC13</i> | 3. Predicted membrane proteins | 17 | 0.12 | 3. Predicted membrane proteins |
| <i>DLK1</i> | 3. Predicted membrane proteins | 9 | 0.06 | |
| <i>USH1C</i> | 4. Other | 9 | 0.06 | 4. Other |
| <i>SOX11</i> | 4. Other | 8 | 0.06 | 4. Other |
| <i>VIL1</i> | 4. Other | 8 | 0.06 | 4. Other |
| <i>FGA</i> | 4. Other | 7 | 0.05 | 4. Other |
| <i>PAEP</i> | 4. Other | 7 | 0.05 | 4. Other |
| <i>APOBEC1</i> | 4. Other | 6 | 0.04 | 4. Other |
| <i>FGB</i> | 4. Other | 6 | 0.04 | 4. Other |
| <i>FGL1</i> | 4. Other | 6 | 0.04 | 4. Other |
| <i>LBP</i> | 4. Other | 6 | 0.04 | |
| <i>SERPINA5</i> | 4. Other | 6 | 0.04 | 4. Other |
| <i>RNF186</i> | 3. Predicted membrane proteins | 4 | 0.03 | 3. Predicted membrane proteins |
| <i>ABP1</i> | 4. Other | 4 | 0.03 | |
| <i>TRIM15</i> | 4. Other | 4 | 0.03 | 4. Other |
| <i>TRIM31</i> | 4. Other | 4 | 0.03 | 4. Other |
| <i>KCNH2</i> | 3. Predicted membrane proteins | 3 | 0.02 | 3. Predicted membrane proteins |
| <i>AGT</i> | 4. Other | 3 | 0.02 | 4. Other |
| <i>CGA</i> | 4. Other | 3 | 0.02 | 4. Other |
| <i>NOLA</i> | 4. Other | 3 | 0.02 | |
| <i>PPP1R14D</i> | 4. Other | 3 | 0.02 | |
| <i>RUNDC3A</i> | 4. Other | 3 | 0.02 | 4. Other |
| <i>CDH18</i> | 3. Predicted membrane proteins | 2 | 0.01 | |
| <i>GABRA5</i> | 3. Predicted membrane proteins | 2 | 0.01 | |
| <i>ASCL1</i> | 4. Other | 2 | 0.01 | |
| <i>AZGP1</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>CALCA</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>DDC</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>FGF3</i> | 4. Other | 2 | 0.01 | |
| <i>IGFBP1</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>KIF5C</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>NEFH</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>PAH</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>PCK1</i> | 4. Other | 2 | 0.01 | |
| <i>PROX1</i> | 4. Other | 2 | 0.01 | 4. Other |
| <i>ZMAT4</i> | 4. Other | 2 | 0.01 | 4. Other |