| Gene   | Paralog genes                                      |
|--------|---------------------------------------------------|
| ALDH1A1| ALDH1A2, ALDH1A3, ALDH2, ALDH1B1, ALDH1L1, ALDH1L2, ALDH9A1, ALDH8A1, ALDH5A1, ALDH7A1, ALDH6A1, ALDH4A1, ALDH16A1, ALDH3A1, ALDH3A2, ALDH3B1 |
| ALDH3A1| ALDH3A2, ALDH3B1, ALDH3B2, ALDH1A3, ALDH1A1, ALDH1A2, ALDH2, ALDH8A1, ALDH1L1, ALDH9A1, ALDH1L2, ALDH5A1, ALDH4A1, ALDH6A1, ALDH7A1 |
| CYP2A6 | CYP2A13, CYP2A7, CYP2F1, CYP2B6, CYP2C19, CYP2S1, CYP2C8, CYP2C9, CYP2E1, CYP2D6, CYP2U1, CYP2J2, CYP2D7, CYP2W1, CYP2R1 |
| CYP2B6 | CYP2A13, CYP2A7, CYP2A6, CYP2C8, CYP2C9, CYP2S1, CYP2C19, CYP2C18, CYP2E1, CYP2D6, CYP2U1, CYP2J2, CYP2D7, CYP2W1, CYP2R1 |
| CYP2C9 | CYP2C9, CYP2C18, CYP2C8, CYP2E1, CYP2A13, CYP2F1, CYP2A6, CYP2B6, CYP2A7, CYP2S1, CYP2D6, CYP2U1, CYP2J2, CYP2D7, CYP2W1, CYP2R1 |
| CYP2C19| CYP2C9, CYP2C18, CYP2C8, CYP2E1, CYP2A13, CYP2F1, CYP2A6, CYP2B6, CYP2A7, CYP2S1, CYP2D6, CYP2U1, CYP2J2, CYP2D7, CYP2W1, CYP2R1 |
| CYP2C9 | CYP2C9, CYP2C18, CYP2C8, CYP2E1, CYP2A13, CYP2F1, CYP2A6, CYP2B6, CYP2A7, CYP2S1, CYP2D6, CYP2U1, CYP2J2, CYP2D7, CYP2W1, CYP2R1 |
| CYP3A4 | CYP3A17, CYP3A7-CYP3A51P, CYP3A45, CYP3A43, CYP3A4 |
| CYP3A5 | CYP3A7, CYP3A7-CYP3A51P, CYP3A44, CYP3A43 |
| GSTA1  | GSTA2, GSTA5, GSTA3, GSTA4, GSTP1, GSTM2, GSTM1, GSTM3, GSTM4, GSTM5, HPGDS |
| GSTM1  | GSTA2, GSTM4, GSTM2, GSTA4, GSTM3, GSTA1, GSTA5, GSTA3, GSTP1, GSTM3, HPGDS |
| GSTT1  | No data for paralogs |
| GSTP1  | GSTA2, GSTA1, GSTA3, GSTA4, GSTA5, GSTM3, GSTM4, GSTM2, GSTM1, GSTM5, HPGDS |

**Supplementary Table 2. Paralog genes for each gene of the custom panel.** Paralog relationships in the hg19 reference genome were obtained from ENSEMBL.