

**Additional File 1.** Phred scores for Sanger sequencing of the heterozygous mutant (red font) and surrounding homozygous wt nucleotides. Normal control sample is shown on the top (green fill). Phred scores for both forward and reverse sequencing reactions are shown. Note that a heterozygous nucleotide would usually affect (decrease) phred scores of a few adjacent wt homozygous nucleotides.

<b>Sample_ID/Nucleotide</b>	<b>C</b>	<b>T</b>	<b>T</b>	<b>G</b>	<b>C</b>	<b>A/C</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>C</b>	<b>C</b>
<b>Normal Control, Forward</b>	61	61	61	61	61	61	61	61	61	59	61
<b>Normal Control, Reverse</b>	61	59	61	61	61	61	61	61	61	61	61
<b>Germline, Forward</b>	61	61	59	61	52	39	44	59	59	61	61
<b>Germline, Reverse</b>	61	61	52	52	59	43	59	59	49	61	55
<b>Grade I tumor, Forward</b>	61	61	55	61	49	36	45	59	61	59	61
<b>Grade I tumor, Reverse</b>	61	61	19	23	31	13	39	39	24	61	59
<b>Grade II-1 tumor, Forward</b>	61	61	59	61	52	45	49	59	61	61	61
<b>Grade II-1 tumor, Reverse</b>	61	61	28	27	37	23	43	43	28	61	55
<b>Grade II-2 tumor, Forward</b>	61	59	59	61	52	49	52	59	61	61	61
<b>Grade II-2 tumor, Reverse</b>	61	61	28	27	36	24	35	45	34	59	37
<b>Grade II-3 tumor, Forward</b>	61	61	59	61	52	49	52	59	61	61	61
<b>Grade II-3 tumor, Reverse</b>	59	61	24	22	33	23	43	43	24	61	61
<b>Grade II-4 tumor, Forward</b>	59	59	61	61	59	52	52	59	59	44	59
<b>Grade II-4 tumor, Reverse</b>	52	52	28	27	38	28	43	43	28	36	59