

**Table S3.** Estimated  $k_{pol}$  (1/s) kinetic parameters for base pairings when previously inserted nucleotide forms a non-Watson-Crick pair [1].

<b>Base pairings</b>	<b>T</b>	<b>G</b>	<b>C</b>	<b>A</b>
<b>A</b>	0.52	0.00052	0.00052	0.00052
<b>C</b>	0.00052	0.52	0.00052	0.00052
<b>G</b>	0.00052	0.00052	0.52	0.00052
<b>T</b>	0.00052	0.00052	0.00052	0.52

The array order is the same as in Table S1.

## REFERENCES

1. Johnson AA, Johnson KA (2001) Fidelity of nucleotide incorporation by human mitochondrial DNA polymerase. *Journal of Biological Chemistry* 276: 38090-38096.