### Figure 4—Source Data 1. Kinetic parameters for DNA dependent stimulation of topo VI ATPase activity.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Topo VI construct | | | | | | | | | | | | | | | |
|  | wildtype | | KGRRAAA | | KGRREEE | | Stalk/  WKxYAAA | | Stalk/  WKxYEEE | | | | H2THAAA | | | H2THEEE |
| Sheared salmon-sperm DNA | | | | | | | | | | | | | | | | |
| kcat-stim,DNA (*ATP/enzyme/min*) | 1.11±0.03 | N/A\* | | | N/A\* | | | N/A\* | | N/A\* | | 1.11±0.03 | | | 1.03±0.03 | |
| Kstim,DNA (*μM bp DNA*) | 61.2±6.3 | N/A\* | | | N/A\* | | | N/A\* | | N/A\* | | 56.2±6.1 | | | 60.2±6.7 | |
| Supercoiled plasmid DNA |  | | |  | |  | | | | |  | | |  | | |
| kcat-stim,DNA (*ATP/enzyme/min*) | 2.93±0.14 | 7.40±0.11 | | | 5.60±0.11 | | | N/A\* | | N/A\* | | 2.76±0.07 | | | 2.30±0.05 | |
| Kstim,DNA (*μM bp DNA*) | 56.8±9.9 | 142.6±6.0 | | | 168.1±9.4 | | | N/A\* | | N/A\* | | 22.3±2.4 | | | 13.2±1.5 | |

**\***data not fit to model due to negligible ATP hydrolysis above basal rate.

**\*\*** Kstim,DNA denotes the basepair concentration (µM) of DNA where half-maximal ATP hydrolysis is attained in the presence of 2 mM ATP.

\*\*\*kcat-stim,DNA denotes the maximal stimulated ATP hydrolysis rate in the presence of the specified DNA substrate and 2 mM ATP.

\*\*\*\*Standard errors in fit parameters are reported.