Supplemental Table 1. Irreversible rate constants ($k_{obs}$) for formation of open complexes as a function of of $[RNAP]_{total}$ and $[Na^+]$ in $Cl^-$ Buffer at 25 $^oC$[a]

| $[Na^+]$ (M) | RNAP (nM) | $k_{obs}$ ($s^{-1}$) | $[Na^+]$ (M) | RNAP (nM) | $k_{obs}$ ($s^{-1}$) |
|---|---|---|---|---|---|
| 0.15 | 1 | $(4.9 \pm 0.3) \times 10^{-2}$ | 0.25 | 7 | $(7.7 \pm 0.7) \times 10^{-3}$ |
| | 5 | $(1.9 \pm 0.1) \times 10^{-1}$ | | | |
| | 15.6 | $(2.7 \pm 0.1) \times 10^{-1}$ | | | |
| | 56.7 | $(3.2 \pm 0.1) \times 10^{-1}$ | | | |
| | 100 | $(3.2 \pm 0.2) \times 10^{-1}$ | | | |
| 0.17 | 5 | $(9.6 \pm 0.7) \times 10^{-2}$ | 0.27 | 7 | $(4.2 \pm 0.2) \times 10^{-3}$ |
| | 12.9 | $(2.1 \pm 0.1) \times 10^{-1}$ | | | |
| | 30 | $(2.3 \pm 0.1) \times 10^{-1}$ | | | |
| | 100 | $(2.8 \pm 0.1) \times 10^{-1}$ | | | |
| 0.19 | 7 | $(5.7 \pm 0.7) \times 10^{-2}$ | | | |
| | 25 | $(1.61 \pm 0.08) \times 10^{-1}$ | | | |
| | 50 | $(2.1 \pm 0.1) \times 10^{-1}$ | | | |
| | 80 | $(2.3 \pm 0.2) \times 10^{-1}$ | | | |
| | 120 | $(2.3 \pm 0.1) \times 10^{-1}$ | | | |
| 0.21 | 7 | $(3.1 \pm 0.3) \times 10^{-2}$ | | | |
| | 25 | $(8.0 \pm 0.6) \times 10^{-2}$ | | | |
| | 50 | $(1.3 \pm 0.1) \times 10^{-1}$ | | | |
| | 80 | $(1.63 \pm 0.09) \times 10^{-1}$ | | | |
| | 129 | $(1.85 \pm 0.09) \times 10^{-1}$ | | | |
| 0.23 | 1 | $(1.4 \pm 0.2) \times 10^{-3}$ | | | |
| | 2 | $(1.9 \pm 0.2) \times 10^{-3}$ | | | |
| | 3 | $(4.6 \pm 0.3) \times 10^{-3}$ | | | |
| | 5 | $(7.0 \pm 0.4) \times 10^{-3}$ | | | |
| | 10 | $(1.6 \pm 0.1) \times 10^{-2}$ | | | |
| | 20 | $(3.0 \pm 0.2) \times 10^{-2}$ | | | |
| | 31 | $(4.3 \pm 2.0) \times 10^{-2}$ | | | |
| | 31 | $(4.3 \pm 0.3) \times 10^{-2}$ | | | |
| | 43.7 | $(6.7 \pm 0.6) \times 10^{-2}$ | | | |
| | 48 | $(7.0 \pm 0.6) \times 10^{-2}$ | | | |
| | 59.8 | $(7.6 \pm 0.6) \times 10^{-2}$ | | | |
| | 67.4 | $(8.3 \pm 0.7) \times 10^{-2}$ | | | |
| | 90 | $(9.0 \pm 0.6) \times 10^{-2}$ | | | |
| | 133 | $(1.04 \pm 0.07) \times 10^{-1}$ | | | |

[a]Concentrations of RNAP are active. Values of $k_{obs}$ determined by fitting the fraction of promoter DNA bound in open complexes as a function of time to eq 1. With the exception of 31 nM RNAP at 0.23 M $Na^+$, $k_{obs}$ was determined once for each [RNAP]; associated error is from the fitting program. Otherwise, the reported error is calculated from the standard deviation ($\delta(n-1)$) of multiple values of $k_{obs}$. At 0.23 M $Na^+$, the first seven entries for $k_{obs}$ were determined using manual mixing, the remaining were determined using rapid quench mixing. At 0.25 and 0.27 M $Na^+$ $k_{obs}$ was determined using manual mixing.