Supporting Information for

Reactions of Methane Monooxygenase Intermediate Q with Derivatized Methanes

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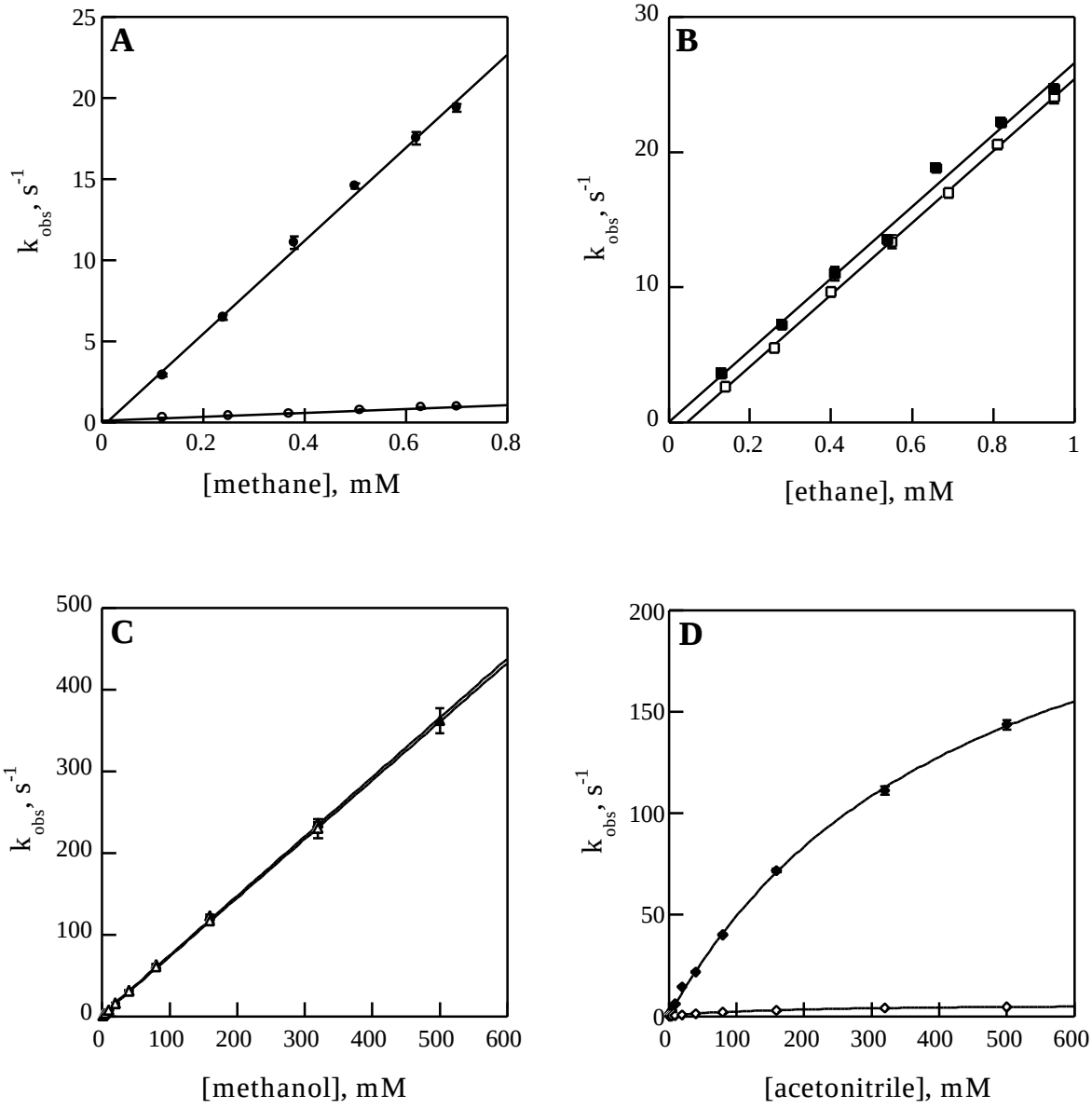
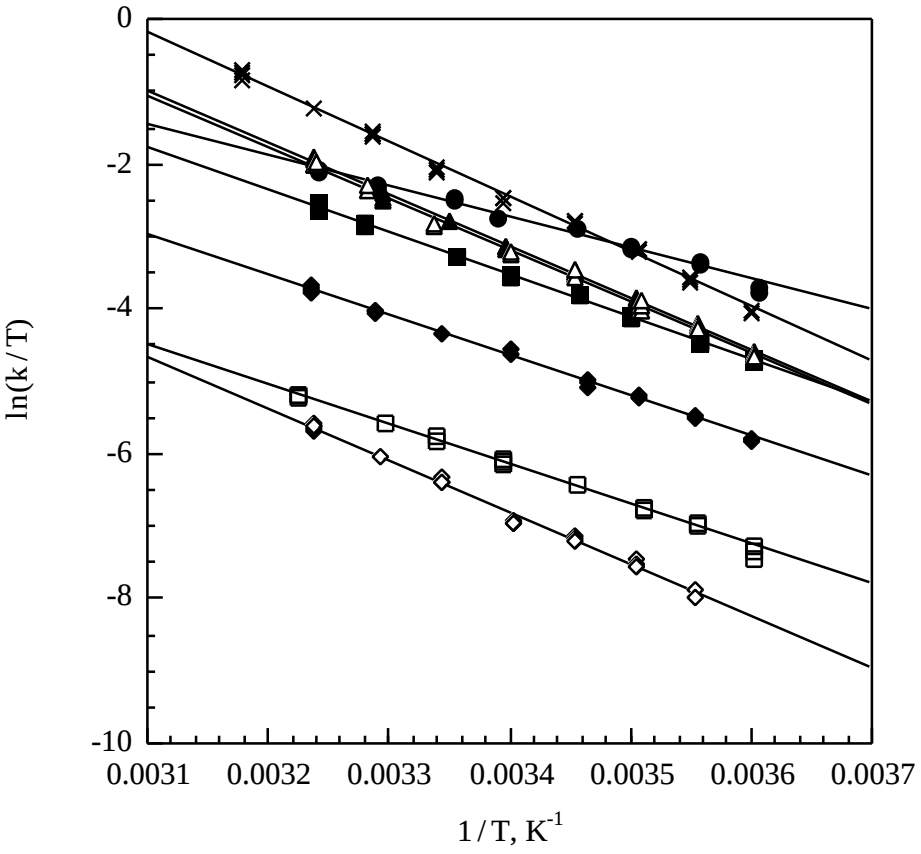
Table S1. Activation Parameters for the Decay of Q in the Presence of Substrates

Substrates	$\Delta H^{\ddagger}$, kcal / mol	$\Delta S^{\ddagger}$, cal / mol·K
CH_4 – 0.7 mM	8.5 ± 0.3	-24 ± 1
C_2H_6 – 0.95 mM	15.1 ± 0.2	-0.9 ± 0.5
C_2D_6 – 0.95 mM	13.3 ± 0.1	-7.3 ± 0.5
CH_3CN – 15.3 mM[a]	11.7 ± 0.1	-14.5 ± 0.4
CD_3CN – 15.3 mM[a]	11.1 ± 0.2	-21.8 ± 0.6
CH_3NO_2 – 20.0 mM[a]	11.2 ± 0.1	-18.5 ± 0.5
CD_3NO_2 – 20.0 mM[a]	14.3 ± 0.2	-12.2 ± 0.8
CH_3OH – 15.1 mM	14.3 ± 0.2	-4.8 ± 0.6
CD_3OH – 15.3 mM	14.1 ± 0.2	-5.6 ± 0.7

[a]Reactions with these substrates exhibit saturation kinetics.



Ambundo, Friesner and Lippard, Figure S1.



Ambundo, Friesner and Lippard, Figure S2.