

## Supplementary Material

### **Characterization of two members among the five ADP-forming acyl-CoA synthetases reveals the presence of a 2-(imidazol-4-yl)acetyl-CoA synthetase in *Thermococcus kodakarensis***

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Table S1. ATP-forming activity of ACS III<sub>Tk</sub> and ICS<sub>Tk</sub> with acyl-CoA substrates.

Enzyme	Specific activity (U mg <sup>-1</sup> ) with			
	Acetyl-CoA	Isovaleryl-CoA	Isobutyryl-CoA	Succinyl-CoA
ACS III <sub>Tk</sub>	27.3 ± 0.5	56.1 ± 1.0	52.0 ± 2.0	ND
ICS <sub>Tk</sub>	16.2 ± 0.7*	ND	ND	ND

Activity measurements were carried out in the presence of 0.5 mM acyl-CoA, 0.4 mM ADP and 20 mM sodium phosphate.

ND, not detected.

\*Measured with 1 mM acetyl-CoA, 0.4 mM ADP and 20 mM sodium phosphate.