1   **Supplemental Fig. 1.** A phylogenetic tree based on the conserved intein motifs listed in

2   Supplemental Table 1 was generated using MrBayes (7) in the Geneious software

3   package. The 148 inteins selected for analysis included all Class 3 inteins, the 2 Class 1

4   WCT motif inteins, 29 inteins with the WCT motif $Cys^{F:4}$ instead of the more common

5    $Asp^{F:4}$ in the absence of the other WCT motif residues, various types of DNA helicase

6   inteins, and phage, prophage or viral inteins. Probability values at each node are

7   expressed as consensus support percentages. The scale bar represents 0.3 substitutions

8   per site. Class 3 inteins are indicated in red, as is the *Arthrobacter species* FB24 DnaB

9   intein that begins with Gly^1, but lacks $Cys^{F:4}$. Further biochemical analysis is required to

10   determine the Class of the *Arthrobacter species* FB24 DnaB intein.

11   Class 1 WCT inteins are indicated in blue. Intein names are defined in the InBase

12   database (http://www.neb.com/neb/inteins.html) (14) with the following additional

13   suffixes: T1, Class 1 intein, T3, Class 3 intein; P, phage or prophage intein; V, viral

14   intein; T1a, DnaB Class 1 intein present at the DnaB-a insertion site; T1b, DnaB Class 1

15   intein present at the DnaB-b insertion site; T1c, DnaB Class 1 intein present at the DnaB-

16   c insertion site; T1d, DnaB Class 1 intein present at the DnaB-d insertion site; T1e, DnaB

17   Class 1 intein present at the DnaB-e insertion site; T1f, DnaB Class 1 intein present at the

18   DnaB-f insertion site; T1h, DnaB Class 1 intein present at the DnaB-h insertion site; T1C,

19   Class 1 intein with $Cys^{F:4}$; T1CP, Class 1 intein from a phage or prophage that has $Cys^{F:4}$;

20   T1WCT, Class 1 intein with the WCT motif.