**Supplemental Table 1 –** Metabolite levels for five samples of each strain OP50, HB101, and MG1655. Levels are normalized to total pellet weight and Bradford protein.

**Supplemental Figure 1** – 2% agarose gel depicting three colonies of iOP50 with the *rnc* deletion allele amplified, and the same three colonies of iOP50 with the T7 RNA polymerase allele identified.

**Supplemental Figure 2** – Reproductive lifespan of animals grown on OP50 or HB101 and supplemented with Betaine or vehicle controls. Collated data from three independent trials.

Statistical significance indicated by asterisk, NS = P >0.05, \* = P <0.05, \*\* = P <0.005. N = 20 for each trial. Reproductive span curves are calculated using Kaplan-Meier survival analysis and compared using the log-rank test.