Energy requirements of cell maintenance As was the case in our *M. genitalium* simulations, and in many flux balance analysis models, not all of the energy consumed by metabolic pathways, macromolecular polymerization, or other growth and non-growth associated processes is accounted for explicitly in our *E. coli* model. This is primarily due to a lack of experimental data and/or knowledge accounting for its usage. Similar to the *M. genitalium* model, we have incorporated reactions in the metabolic model with two parameters, Growth Associated Maintenance (GAM) and Non-Growth Associated Maintenance (NGAM), which modulate energy consumption associated with growth and cell maintenance.

Associated data

Parameter	Symbol	Units	Value	Reference
Growth associated maintenance	GAM	mmol ATP/g DCW	59.81	[1]
Non-growth associated maintenance	NGAM	mmol ATP/g DCW/h	8.39	[1]

Table 1: Table of parameters for energy requirements of cell maintenance.

References

[1] Adam M Feist, Christopher S Henry, Jennifer L Reed, Markus Krummenacker, Andrew R Joyce, Peter D Karp, Linda J Broadbelt, Vassily Hatzimanikatis, and Bernhard Ø Palsson. A genome-scale metabolic reconstruction for escherichia coli k-12 mg1655 that accounts for 1260 orfs and thermodynamic information. *Molecular systems biology*, 3(1):121, 2007.