

**Table 1. Summary of organisms and metabolic pathways used to build the FBA model.** Also noted are the mechanisms by which each organism obtains its energy, tolerance for oxygen and number of reactions in the carbon fixation pathway.

Carbon Fixation Pathway	Organism	Energy Source	Light Harvesting	Aerobic/Anaerobic	Number of Reactions	Growth Rate (hr <sup>-1</sup> )
Calvin Benson Bassham	<i>Synechocystis</i> sp. PCC 6803	Light	Oxygenic	Aerobic	11	0.085 <sup>(Shastri and Morgan, 2005)</sup>
Reductive TCA Cycle	<i>Chlorobium thiosulfatophilum</i>	Light and Sulfur	Anoxygenic	Anaerobic	12	0.042 <sup>(Cork et al., 1983)</sup>
3-Hydroxypropionate/Malyl-CoA Cycle	<i>Chloroflexus aurantiacus</i>	Light and Sulfur	Anoxygenic	Anaerobic	11	0.026 <sup>(Herter et al., 2001)</sup>
Reductive Acetyl-CoA Pathway	<i>Clostridium acetivum</i>	Hydrogen	-	Anaerobic	8	0.099 <sup>(Savage et al., 1987)</sup>
3-Hydroxypropionate/4-Hydroxybutyrate Cycle	<i>Metallosphaera sedula</i>	Hydrogen and Oxygen	-	Aerobic	17	0.087 <sup>(Berg et al., 2007)</sup>
Dicarboxylate/4-Hydroxybutyrate Cycle	<i>Ignicoccus hospitalis</i>	Hydrogen and Sulfur	-	Anaerobic	14	0.693 <sup>(Jahn et al., 2007)</sup>