

**Table S1. Classes and subclasses of the evidence type in Metagrowth**

<b>Class</b>	<b>Subclass</b>	<b>Description</b>
<b>I</b>		“Cannot-make evidence”: <b>Compound X</b> predicted or demonstrated to be not synthesized by the cell could be a candidate for supplementation in the culture medium.
	<b>D</b>	Deficiency <b>in the biosynthesis of X</b> (predicted or experimental)
	<b>N</b>	Not synthesized generally (e.g. inorganic molecules such as metal ions)
<b>II</b>		“Can-uptake evidence”: Compound <b>X</b> predicted or demonstrated to be up taken by the cell could be a candidate for supplementation <b>in</b> the culture medium.
	<b>T</b>	Transporter for compound <b>X</b> is <b>predicted or demonstrated</b> to be present in <b>the cell</b> . <b>The transporting mechanisms can be either active or spontaneous permeation.</b>
	<b>R</b>	Related organisms are known to uptake <b>X</b> , <b>although</b> this is not <b>demonstrated</b> for the bacterium.
<b>III</b>		“Utilizing evidence”: Compound <b>X</b> predicted <b>or demonstrated</b> to be utilized by the cell could be a candidate for supplementation <b>in</b> the culture medium.
	<b>G</b>	Generally, <b>X</b> must be present in any bacterial cells, since <b>X</b> is a building block for the biosynthesis of proteins, RNA, DNA or membrane phospholipids. <b>For this category, we currently consider</b> the 20 amino acids, <b>nucleoside triphosphates (ATP, GTP, UTP, CTP, TTP)</b> and fatty acids. Inorganic molecules such as H <sub>2</sub> O and metal ions are not included <b>in this category</b> .
	<b>C</b>	Cofactor <b>X</b> must be present in the bacterial cell since the cell possesses enzymes utilizing the cofactor <b>X</b> (predicted or experimental). <b>We consider those cofactors that are described in the “Cofactor(s)” records of the ExPaSy/ENZYME database. Those cofactors (organic molecules or metal ions) are not included in the enzymatic reaction formula.</b>
	<b>V</b>	Vitamin (or precursor) form molecule <b>X</b> of the cofactor <b>Y</b> must be present in the cell, since the cell possesses enzymes utilizing the cofactor <b>Y</b> (predicted or experimental). <b>Y (but not X) is described in the “Cofactor(s)” records of the ENZYME database. The relationships between vitamins and cofactors were obtained from online resources such “microbiology textbook (<a href="http://www.bact.wisc.edu/Microtextbook/">http://www.bact.wisc.edu/Microtextbook/</a>) and other biochemistry textbooks.</b>
	<b>S</b>	Substrate <b>X</b> must be present since the cell possesses metabolic pathways utilizing <b>X</b> as a starting substrate. The use of <b>X</b> can be suggested by <i>in silico</i> model or experiments. <b>This category of compounds does not include generally required compounds (“G”), cofactors (“C”) or vitamins (“V”).</b>
<b>IV</b>		Other evidences
	<b>E</b>	Positive experimental results (e.g. temperature, pH, anti-oxidants etc.)
	<b>U</b>	Unspecified