

Review of: "Why We Stop Synthesizing Essential Amino Acids: The Extracellular Protein Hypothesis"

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Potential competing interests: No potential competing interests to declare.

I read the manuscript entitled "Why We Stop Synthesizing Essential Amino Acids: The Extracellular Protein Hypothesis" with interest. It is an interesting work that discusses the reasons behind the loss of essential amino acid synthesis capabilities in different eukaryotic lineages. The hypothesis was interesting. In my opinion, the most important and key statement in this paper is "This primarily stems from the fact that autotrophic organisms, such as plants and fungi, which lack the capability to ingest, do not require amino acids, whereas eukaryotic organisms that have gained the ability to ingest food uniformly demonstrate a common set of essential amino acids." Also, according to figure 1, which demonstrates the correlation between amino acid synthesis cost, hydrophobicity, and essentiality, the cost and benefit can be responsible for the fact that "why we stop synthesizing essential amino acids." On the other hand, it should be emphasized that the synthesis of essential amino acids has a higher level of complexity than non-essential amino acids; therefore, mammals have evolved according to their dietary sources and habits of feeding.

With Best Regards,