Review of: "Cell-cell metabolite exchange creates a pro-survival metabolic environment that extends lifespan"

Dan Ye[1]

1 Fudan University

Potential competing interests: The author(s) declared that no potential competing interests exist.

In the study by Clara Correia-Melo et al., the authors show that metabolite exchange interactions is a determinant of the ageing process in yeast. The findings are potentially interesting.

Two major concerns/questions:

1. Paracrine signaling molecule(s) normally trigger a response in the target cells. The authors stated that Glycerol in the communal metabolic environment extended the lifespan of all cells in the community in a ‘paracrine’ fashion. Is there a receptor for sensing secreted glycerol in the target cells? If so, how does glycerol trigger the downstream signaling? How about the absolute concentration of glycerol out of the cell? Does the concentration of extracellular glycerol reach the Kd of its receptor in the target cells? These questions should be addressed in order to strengthen the authors' conclusion.
2. In addition to yeast in the context of cellular ageing and lifespan, does the metabolic intercellular interaction also occur in mammal cells? If so, it will expand the biological significance of this study.