

Yeast Replicative Aging: A Paradigm for Defining Conserved Longevity Interventions

The finite replicative life span of budding yeast mother cells was demonstrated as early as 1959, but the idea that budding yeast could be used to model aging of multicellular eukaryotes did not enter the scientific mainstream until relatively recently. Despite continued skepticism by some, there are now abundant data that several interventions capable of extending yeast replicative life span have similar effect in multicellular eukaryotes including nematode worms, fruit flies, and rodent. In particular, dietary restriction, mTOR signaling, and sirtuins are among the most studied longevity interventions in the field. Here, we describe key conserved longevity pathways in yeast and discuss relationships that may help explain how such broad conservation of aging processes could have evolved.