



Using Bacteria to Extend Animal Lifespan

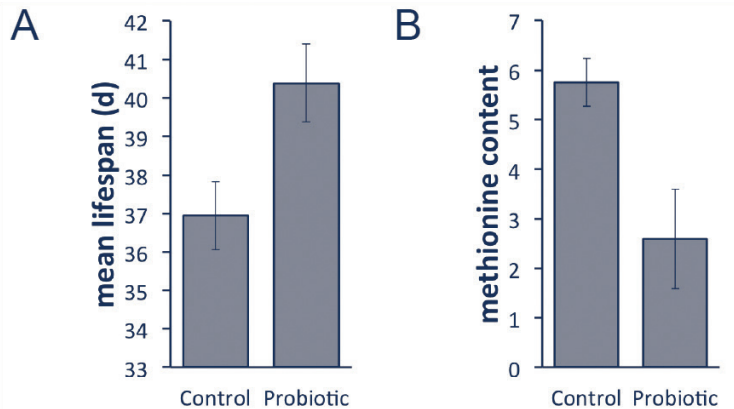
BYU #2017-026

DESCRIPTION

Researchers at BYU are developing a method to increase animal lifespan by using bacterial methionine metabolism. The discovery is that by reducing the function of bacterial methionine metabolism genes, in the digestive tract, the lifespan of animals associated with the mutant bacteria can be extended. The inventors have also found that eliminating function of vitamin B6 genes in the bacteria decreases lifespan of the associated host.

PROBLEM SOLVED

Studies have shown that an increase in lifespan in a variety of organisms, including *Drosophila melanogaster* (fruit fly), is dependent on the amount and type of nutrients being consumed. The researchers have been able to demonstrate that it is possible to influence flies lifespan on a nutrient-rich diet simply by altering their gut microbes. After testing *E. coli* mutants, it was confirmed that microbes were influencing *Drosophila* lifespan by altering flux through the transulfuration pathway. It was also shown that a bacterial strain that catabolizes methionine from the diet through transsulfuration decreases methionine content of the fly diet and the fly itself, and increases fly lifespan.



Influence of bacterial transsulfuration on fruit fly lifespan and dietary methionine content.

KEY ADVANTAGES

- » Extends animal lifespan
- » Allows for specific lowering of levels of the amino methionine from natural food items

Offer:
License
Exclusive
World Wide
All Fields of Use

APPLICATIONS

The invention could be used as a probiotic to increase animal lifespan and it could potentially be most useful if taken late in life.

IP Status:
Patent Pending



Lead Inventor

Dr. John Chaston
PhD, Microbiology



Mike Alder
mike_alder@byu.edu
(801) 422-6266