

2nd Lecture: Hormesis

General part

- Definition (bimodal stress responses)
 - Examples
- Hormesis in diseases and aging

Experimental part on *C. elegans*

- Resistance to stress and aging
- Hormesis and toxicology studies
 - Mitochondrial hormesis

Take home messages

1. Hormesis concept (and different types): treatments are beneficial at a low level/doses but harmful at a higher level/doses
2. Different stressors can trigger a hormetic response
3. Hormesis is independent of biological model and measured endpoint
4. Hormesis \neq Homeopathy
5. Conditioning Hormesis: a low dose of treatment/stressor protects against a high/harmful dose of the same or another treatment/stress (cross-tolerance)
6. Hormetic treatments can influence healthy aging
7. Hormetins as potential drugs to prevent/treat age-associated diseases
8. Mild stressors (e.g. hypoxia preconditioning, mitochondrial stress) to prevent age-associated changes (e.g. protein aggregation, lifespan)