Abstract/Session Information for Program Number 337A

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Abstract Content

Program Nr: **337A**

A Genetic Screen for New Genes Involved in Aging. **Ala Berdichevsky**[1], Leonard Guarente[2], Bob Horvitz[1]. 1) HHMI, Biology, MIT, Cambridge, MA; 2) Biology, MIT, Cambridge, MA.

Over the last decade, several lines of experiments using *C. elegans* and other organisms have resulted in progress towards understanding molecular mechanisms of aging. Mutations in genes involved in the insulin-like pathway or in mitochondrial function significantly affect *C. elegans* lifespan. Research in the field has largely focused on the study of genes that normally function to reduce longevity, that is, genes that mutate to extend lifespan. This focus is primarily a consequence of the difficulties in distinguishing accelerated aging from sickness in short-lived mutants. Recently, Garigan *et al.*[1] and Herndon *et al.*[2] investigated a number of old-age characteristics of *C. elegans*, such as muscle deterioration, cuticle thickening, and accumulation of autofluorescence. Such observations may help to distinguish between aged and sick worms and therefore facilitate the study of the aging process in *C. elegans*.

The accumulation of a fluorescent pigment in the gut of old worms has long been known to be a marker of aging. The amount of pigment is consistent among wild-type animals of the same age and gradually increases throughout adulthood. We measured the spectrum of the autofluorescence and quantitated the amount of the pigment. At all ages tested, *daf-2(e1370)* animals accumulated less fluorescence than did wild-type animals, whereas *daf-16(mgDf50)* animals accumulated more fluorescence than did wild-type worms. These findings correlate with the longer lifespan and delayed aging of *daf-2* mutants and the shorter lifespan of *daf-16* mutants.

To identify genes that when disrupted cause premature aging, we are performing a screen for mutants that show early accumulation of gut autofluorescence. Mutants isolated from this screen will be tested for other aging-related characteristics.

1. Garigan, Hsu, Fraser, Kamath, Ahringer and Kenyon, Genetics **161**: 1101-1112 (2002); 2. Herndon, Schmeissner, Dudaronek, Brown, Listner, Sakano, Paupard, Hall and Driscoll, Nature **419**: 808-814 (2002).

Session Information

Session Title: AGING AND STRESS

Session Type: POSTER, **Session Time:** Monday-Wednesday

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Abstract Information

Poster Board Number: 337A, **Presentation Time:** MON, JUNE 30, 2003 3:00-4:30PM

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