

PRESS RELEASE

BIOMARKER PHARMACEUTICALS INC. DISCOVERS CALORIE RESTRICTION HAS IMMEDIATE EFFECTS ON EXTENDING LIFESPAN AND REDUCING CANCER

Campbell, Ca., March 22, 2004 - Scientists from BioMarker Pharmaceuticals Inc. and the University of California have discovered that the lifespan extending effects of calorie restriction (CR) occur rapidly, even in older animals.

The researchers suggest that drug therapies that mimic the effects of CR may prolong life by reducing the rate of aging, as well as prevent diseases commonly associated with aging. Their report appears this week in the Proceedings of the National Academy of Sciences USA Online Early Edition (article #03-05300).

Using DNA microarrays (gene chips), the BioMarker and University of California scientists showed that gene expression patterns of mice changed quickly in response to CR, and that this genetic change correlated with a shift towards increased lifespan. Changing the CR mice back to a control diet reversed the gene expression patterns and returned them to the control rate of aging, suggesting a cause and effect relationship.

"The beneficial effects of CR have been known for some time, but only when animals are started on the diet early in life. This is the first demonstration that these effects can be obtained even when CR is started late in life," says Joseph Dhahbi, Ph.D., Research Director at BioMarker. "The incidence of tumors was significantly reduced in the CR animals," noted Stephen Spindler, Ph.D., who directed the University of California team.

Like mice on CR diets, dwarf mice, which have a mutation that affects the production of growth hormone, also show a remarkable extension in lifespan. The BioMarker and University of California scientists teamed up with Andrzej Bartke, Ph.D., professor at Southern Illinois University School of Medicine, to examine these animals with DNA microarrays. These results, published this week in the online journal Physiological Genomics, identify a novel and focused group of new genes closely associated with the regulation of lifespan in mammals.

"We are committed to developing therapeutics that will treat or prevent a broad range of diseases associated with aging," says Xi Zhao-Wilson, Ph.D., President and CEO, BioMarker Pharmaceuticals Inc. "We feel that the results described in these two scientific studies validate our pharmaceutical development strategy, as well as make a significant contribution to the science of aging."

BioMarker Pharmaceuticals Inc. is developing CR mimetics, drugs that will reproduce the beneficial effects of calorie restriction. CR is the only intervention shown to extend lifespan and retard aging in mammals. BioMarker intends to provide innovative solutions to improve the quality of life and prolong a healthy lifespan.

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