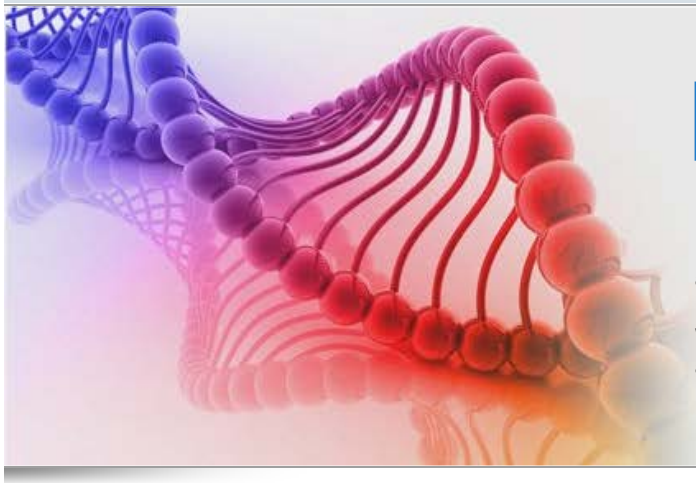

Fight Aging!

"We stand on the verge of a revolution in medicine: understanding, treating, and ultimately preventing the causes of degenerative aging. But medical revolutions only happen if we all stand up in support of funding and research. We did it for cancer. We're doing it for Alzheimer's disease. We can do it for aging - and go on to create an era of far longer, far healthier lives!"

06 FEB 2012

Directing Stem Cells to Enhance Bone Strength

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Osteoporosis is a pervasive issue in the old, and potential methods for reversing its effects are welcome: scientists have "developed a novel technique to enhance bone growth by using a molecule which, when injected into the bloodstream, directs the body's stem cells to travel to the surface of bones. Once these cells are guided to the bone surface by this molecule, the stem cells differentiate into bone-forming cells and synthesize proteins to enhance bone growth. ... There are many stem cells, even in elderly people, but they do not readily migrate to bone. Finding a molecule that attaches to stem cells and guides them to the targets we need is a real breakthrough. ... The researchers made use of a unique hybrid molecule, LLP2A-alendronate ... The researchers' hybrid molecule consists of two parts: the LLP2A part that attaches to mesenchymal stem cells in the bone marrow, and a second part that consists of the bone-homing drug alendronate. After the hybrid molecule was injected into the bloodstream, it picked up mesenchymal stem cells in the bone marrow and directed those cells to the surfaces of bone, where the stem cells carried out their natural bone-formation and repair functions. ... Twelve weeks after the hybrid molecule was injected into mice, bone mass in the femur (thigh bone) and vertebrae (in the spine) increased and bone strength improved compared to control mice who did not receive the hybrid molecule. Treated mice that were normally of an age when bone loss would occur also had improved bone formation, as did those that were models for menopause." This is an example of the future of stem cell medicine - more about directing and altering stem cells in the body to create in-situ effects than providing new cells or growing tissue for transplant.

Link: http://www.eurekalert.org/pub_releases/2012-02/uoc--rdm020312.php

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Name:

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Yes No

First Steps

Read an Introduction to Longevity...
...and Then Do Something About It

The Causes of Aging

Accumulating AGEs
Buildup of Amyloid Between Cells
The Failing Adaptive Immune System
The Failing Innate Immune System
Declining Lysosomal Function
Mitochondrial DNA Damage
Nuclear DNA Damage
Buildup of Senescent Cells
Other Causes of Aging

Archives and Feeds

Monthly News and Blog Archives
Newsletter Archive
Using the Fight Aging! Content Feeds

Required Reading

Calorie Restriction
The Community, Visualized
Cryonics
Engineered Negligible Senescence
Envisaging a World Without the FDA
How to Argue for Longevity Science
Introductory Articles
The Odds of Human Longevity Mutations
The Need For Activism and Advocacy
Stem Cells, Regenerative Medicine
Twelve Ways to Extend Mouse Life Span
Transhumanism and Human Longevity
The Vital Debate in Aging Research
What is Anti-Aging?

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