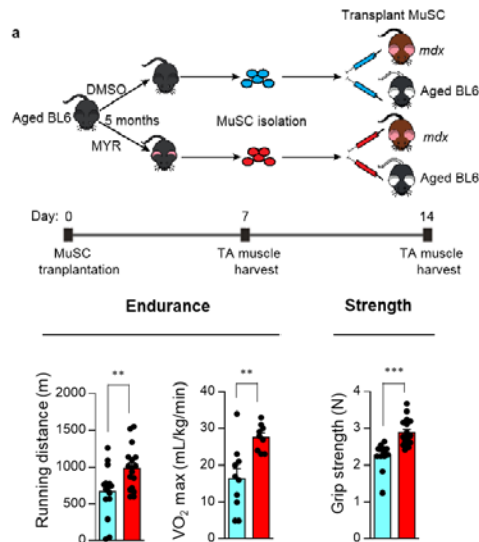
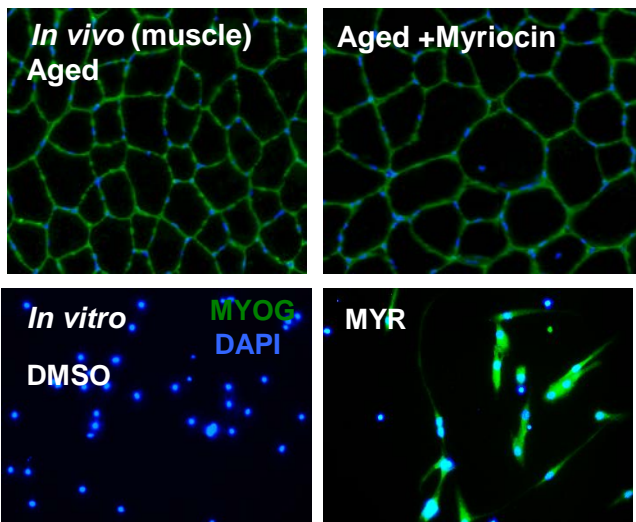


# Treatment and prevention of age related diseases by the inhibition of sphingolipid synthesis



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 Sphingolipids, aging, inhibitor, muscle regeneration, grip strength, endurance, ceramide, Duchenne muscular dystrophy, sarcopenia  
 Intellectual Property

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## Description

Sphingolipids regulate aging and senescence, and are involved in diabetes and cardiovascular disease. Ceramides induce cellular senescence.

The present invention describes a method for treatment or prevention of age-related muscle disease by administering a suitable effective dose of inhibitors of sphingolipid synthesis. The inhibitors can also be used in muscular dystrophies, including Duchenne muscular dystrophy.

The inhibitors may be formulated as vesicles (liposomes, exosomes, or lipid nanospheres). Evidence that sphingolipids have an independent effect on muscle regeneration on different muscle cells and *in vivo*.

## Advantages

- The inhibitors are small molecules

- Efficiency of several sphingolipid inhibitors can be determined simultaneously in high throughput formats
- Inactivation of sphingolipid synthesis increases muscle mass and grip strength
- Inactivation of sphingolipids improves endurance and muscle regeneration
- Genetic validation of sphingolipids as drug target in humans
- Can be simultaneously used to treat many disease (DM, CVD, and Alzheimer's)
- Could reduce polypharmacy

## Applications

- attenuate frailty and sarcopenia
- treatment of Duchenne muscular dystrophy, and other dystrophies
- prevention and treatment of age-related degenerative diseases (Alzheimer's, Senile dementia, Parkinson's disease)