

## **Isotope effect as a new weapon against oxidative stress**

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A method will be presented that has the potential to increase the stability of lipids, proteins, nucleic acids and other cellular components towards the detrimental damages caused by reactive oxygen species (ROS). The rate-limiting step of most ROS-driven oxidation reactions is hydrogen abstraction. The oxidation-susceptible sites within these (bio)molecules can thus be made less vulnerable to ROS-driven oxidation by incorporating heavy stable isotopes, such as deuterium or/and carbon-13. Ingestion of isotopically reinforced building blocks, such as amino acids, lipids, and components of nucleic acids and their subsequent incorporation into macromolecules would make the latter more stable to ROS courtesy of the isotope effect.<sup>[1]</sup>

The suggested approach may lead to enhanced resistance toward oxidative stress.

### ***Reference***

1. Reactive oxygen species, isotope effect, essential nutrients, and enhanced longevity. Shchepinov MS. *Rejuvenation Res.* **2007**, *10*, 47-59.