Pure C15:0 went head-to-head against leading longevity drugs... and won.

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Welcome to Issue 68 of Science Says! Our weekly newsletter where you'll learn the latest healthy aging and C15:0 research news that our team of doctors, scientists, and experts are most excited about—without having to go search for it.

Eric and Steph
Co-Founders, Doctors, Nerds

What Dr. Stephanie Venn-Watson, our co-founder and author of over 80 peer-reviewed scientific publications, is reading.

HEALTHY AGING

The ultimate healthy aging molecule

This past week, we had our latest big science drop, which was published in the peer-reviewed scientific journal, *Nutrients*. So, let's get to it.

A new C15:0 discovery? Do tell.

Well, given the voluminous science supporting the broad long-term health benefits of C15:0 (pentadecanoic acid), we decided to raise the science bar WAY up.

We had previously demonstrated that C15:0 has 3x more cellular benefits than the purest, highest performing omega-3 (EPA). ***So, why not see how C15:0 does against three top contenders to extend human longevity: rapamycin, metformin, and acarbose?***

Here's what we found.

In this study, pure C15:0 had the most cell repairing benefits (n=36 benefits), closely followed by rapamycin (n=32 benefits), then metformin (n=17 benefits). Acarbose came in last, with 5 cell-based activities. Our results showed that C15:0 is an essential nutrient with cellular benefits that match, and even surpass, leading longevity-enhancing compounds.

This sounds good. But what do you mean by "cell repairing benefits"?

Glad you asked. This study used an industry standard set of human cell-based assays called BioMAP Diversity PLUS. BioMAP, which is conducted by independent, third-party experts, includes twelve different cell systems representing a wide variety of conditions mimicking various chronic disease states.

These cell systems were treated with each of our four test compounds at four doses. An impressive 148 biomarkers were measured to see: 1) what cell repairing benefits, if any, does the compound have in the various cell systems compared to non-treated controls, 2) if these benefits are dose-dependent, and 3) if the compound can repair cells *safely*.

This is how we know that C15:0 had 36 significant, dose-dependent benefits across 10 of the 12 human cell systems. All while being safe to our cells, too.

Great. How are these benefits relevant to longevity?

Pure C15:0 did a bunch of good things that are expected to extend both our healthspan and lifespan, including:

- Taming numerous pro-inflammatory cytokines and chemokines
- Stopping bad "zombie" cells from proliferating
- Slowing tissue scarring, including in systems relevant to heart, lung, and liver health

At their optimal, highest performing doses, C15:0 (17 uM) and rapamycin (9 uM) share a remarkable 24 cell-repairing benefits. This is even more remarkable, given that pure C15:0 is a natural and safe essential fatty acid, while rapamycin is a prescription drug borne from rare bacteria that grow on Easter Island. I'll take C15:0, please.

Added candles on C15:0's longevity cake.

In addition to sharing these new and exciting results, our paper in *Nutrients* includes an extensive discussion on how C15:0 is emerging as a leading longevity-enhancing nutrient, including the following important facts:

- People with higher C15:0 levels have healthier metabolism, hearts, livers, lungs and immune systems.
- C15:0 supplementation directly supports metabolic, heart, liver, and immune health in relevant models.
- C15:0 is a pleiotropic molecule with multiple mechanisms of action relevant to supporting long-term health and longevity, including its role in activating AMPK and PPARs, while inhibiting mTOR, JAK-STAT, and HDAC6.
- C15:0 directly targets multiple hallmarks of aging (how we age at the cellular level) by repairing mitochondrial function, stabilizing cell membranes, and supporting cellular signaling pathways.

Combined, this science shows that C15:0 is essential to protecting our cells (and us) against age-related breakdown. The result? More time for for you to enjoy holidays with your friends and family (including the 4-pawed furry ones), brisk autumn walks, and *Science Says!*

Thanks for being with us on this journey, where our science and adventures to help improve global health continue. Have a wonderful week, everyone!

Dive deeper into the science

READ OUR LATEST PEER-REVIEWED DISCOVERY

▸ Nerd out on all the C15:0 science at discoverC15.com