Prevenagen For Mental Clarity?

By Joe Schwarcz — January 24, 2019

Why should there be any connection between a jellyfish protein and brain function? The glow produced by some jellyfish is produced when apoaequorin binds to calcium, a finding that is of interest to researchers because the human brain also contains calcium-binding proteins that play a crucial role in brain function. Nerve cells need calcium for proper functioning, but it has to be just the right amount of calcium, not too little and not too much. Calcium-binding proteins protect against excess calcium but unfortunately, with age the levels of these proteins decrease and the resulting high levels of unbound calcium can damage nerve cells, impairing thought and memory. The jellyfish protein has an amino acid sequence that is very similar to that of the body’s calcium-binding proteins, and indeed, when cells in the lab are treated with this protein, they are more resistant to induced damage. This has spawned the idea that apoaequorin can protect nerve cells...
from some of the consequences of aging. Maybe so, in cell cultures in the lab.

However, if this protein is ingested in a pill form, for any hope of efficacy it would have to survive digestion, be absorbed into the bloodstream, and then cross the blood brain barrier. But proteins are readily broken down during digestion into amino acids and peptides so the chance of an intact protein ending up in brain cells is remote, to say the least. Forget the scientific implausibility though; the relevant question is whether Prevagen works.

Quincy Bioscience, the company that markets Prevagen, hypes an in-house placebo controlled trial that shows memory improvement after ninety days. Actually, while there were some positive results in a few specific tests, overall the placebo group performed as well as the experimental group. Aside from the company’s own questionable trial, there are no peer-reviewed publications attesting to the safety and efficacy of Prevagen. Nevertheless, Quincy Bioscience claims that its product has been clinically shown to improve memory and provide cognitive benefits although the small print in the ad does state that: "These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease."

There is another kicker. The company’s “evidence of safety” basically admits that the product cannot work. The unpublished, hyped study concludes: “The current study assesses the allergenic potential of the purified protein using bioinformatic analysis and simulated gastric digestion. The results from the bioinformatics searches with the apoaequorin sequence show the protein is not a known allergen and not likely to cross-react with known allergens. Apoaequorin is easily digested by pepsin, a characteristic commonly exhibited by many non-allergenic dietary proteins.

From these data, there is no added concern of safety due to unusual stability of the protein by ingestion." In other words, this amounts to an admission that the protein is broken down in the digestive tract and does not enter the brain.

To complicate the situation further, the FDA has charged that Quincy Bioscience is marketing Prevagen as a dietary supplement, a category for which it does not qualify since apoaequorin is synthetically produced. Based on the claims made for the product, is should be classified as a drug, but it has never been approved as such. That would require a degree of evidence that the company cannot provide. FDA also claims that the company has not disclosed over a thousand reported adverse reactions to Prevagen including seizures, strokes, and worsening symptoms of multiple sclerosis as well as chest pains, tremors, fainting and curiously, memory impairment and confusion.

Little wonder that consumers are not enamoured of Prevagen. Some have even organized a class action lawsuit against the company claiming that "Prevagen is a singular purpose product: its only purported benefit is to enhance brain function and memory — which it does not do."

One supposes the company’s executives take their own product and their lack of understanding what evidence-based science means seems to be a clear indication of a lack of Prevagen’s promised mental clarity.

*The original McGill University OSS post can be found [here](#). [1]