Researchers at the University of South Florida have developed a method that improves the bioavailability of epigallocatechin (EGCG) through encapsulation with liposomal nanoparticles.

EGCG is a non-enzymatic antioxidant that has been shown to possess potent anti-inflammatory and antioxidative capacity. Preclinical studies have further shown that EGCG effectively modulates the cleavage of amyloid precursor protein (APP), thus preventing beta amyloid plaque formation, a hallmark of AD pathology and HIV-associated dementia (HAD). However, the translation of these results to clinical trials has been problematic primarily as a result of poor bioavailability and inefficient systemic delivery.

Our researchers developed a novel liposomal nanoparticle delivery system in an attempt to enhance the bioavailability of EGCG. Compositions of EGCG encapsulated within nanoparticle liposomes were tested and results indicated an almost four-fold increase in the bioavailability of EGCG in vivo. Also, the bioactivity of EGCG was drastically enhanced via significant increases in the neuronal alpha-secretase activity.

**ADVANTAGES:**
- Increased absorption into the systemic circulation
- Increased bioactivity
- Reduced toxicity

*Figure 1: shows the effectiveness of the EGCG liposomal formulations 1:16 an 1:8*

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