

FOR CHRONIC INFLAMMATION

Chronic inflammation is a critical process in the pathogenesis of many diseases, including cardiovascular disease, cancer, diabetes, degenerative joint diseases and neurodegenerative diseases. Although it is recognized that chronic inflammation is a complex process, it is also appreciated that dietary habits can influence inflammatory responses. Other popular methods to combat inflammation and its associated symptoms involve the use of nonsteroidal anti-inflammatory drugs (NSAIDs), however, the longterm use of these drugs is associated with severe side effects. Therefore, investigating natural methods of control of inflammation are warranted. A traditional Mediterranean diet has been shown to confer some protection against the pathology of chronic diseases through the attenuation of pro-inflammatory and pro-oxidant mediators and this has been largely attributed to the high intake of extra virgin olive oil (EVOO). EVOO contains numerous phenolic compounds that exert potent anti-inflammatory and antioxidant actions. Oleocanthal (OC) and oleacin (OLC) are found in EVOO and possess anti-inflammatory properties similar to ibuprofen. [1] Oleolive Inc. has introduced Oligen into the dietary supplement market, as a patented encapsulated powder formulation enriched in OC and OLC.

CLINICAL DATA

In one clinical study with 23 subjects inflammatory cytokines were measured after 2 months of high phenolic EVOO intake (IL-10 is an anti-inflammatory cytokine) [2]:

| CYTOKINE | BASELINE | AFTER 2 MOS. | | P-VALUE | % IMPROVEMENT |
|---------------------|-----------|--------------|---|---------|---------------|
| IL-6 (PG/ML) | 2.9 ± 2.2 | 2.0 ± 1.9 | ↓ | 0.020 | 32% |
| IL-17-ALPHA (PG/ML) | 3.2 ± 4.0 | 1.5 ± 1.3 | ↓ | 0.044 | 54% |
| TNF-ALPHA (PG/ML) | 7.3 ± 2.2 | 6.3 ± 2.1 | ↓ | 0.003 | 14% |
| IL-1B (PG/ML) | 0.8 ± 1.4 | 0.2 ± 0.3 | ↓ | 0.045 | 75% |
| IL-10 (PG/ML) | 0.4 ± 0.4 | 0.9 ± 1.3 | ↑ | 0.039 | 225% |

Phenolic rich EVOO significantly reduced levels of inflammatory cytokines while increasing the level of a anti-inflammatory cytokine. A separate and larger (n=51) double blind controlled clinical trial showed confirmatory results where the high phenolic EVOO treatment group saw a reduction in inflammatory biomarkers TNF-Alpha and IL-1B [3]

SUPPORTIVE PRECLINICAL DATA

Dozens of animal studies have been published on the anti-inflammatory effects of EVOO phenolics confirming the benefits of consumption on the inflammatory process. A succinct table with results can be found in reference [4]

OC was originally discovered by Dr. Gary Beauchamp at Monell Chemical Senses Center and he was the first to publish on OC's NSAID properties. "Our findings raise the possibility that long-term consumption of oleocanthal may help to protect against some diseases by virtue of its ibuprofen-like COX-inhibiting activity (5). Oligen is formulated as an encapsulated powder supplying a daily dose of 5 mg OC and OLC, equivalent to 3 tablespoons of standard EVOO containing over 400 calories.

REFERENCES

1. Molecular mechanisms of inflammation. Anti-inflammatory benefits of virgin olive oil and the phenolic compound oleocanthal DOI: 10.2174/138161211795428911
2. Daily Use of Extra Virgin Olive Oil with High Oleocanthal Concentration Reduced Body Weight, Waist Circumference, Alanine Transaminase, Inflammatory Cytokines and Hepatic Steatosis in Subjects with the Metabolic Syndrome: A 2-Month Intervention Study DOI: 10.3390/metabo10100392
3. Effects of Virgin Olive Oils Differing in Their Bioactive Compound Contents on Biomarkers of Oxidative Stress and Inflammation in Healthy Adults: A Randomized Double-Blind Controlled Trial DOI: 10.3390/nu11030561
4. Effects of Olive Oil and Its Minor Components on Cardiovascular Diseases, Inflammation, and Gut Microbiota DOI: 10.3390/nu11081826
5. Ibuprofen-like activity in extra-virgin olive oil Enzymes in an inflammation pathway are inhibited by oleocanthal, a component of olive oil. DOI: 10.1038/437045a

*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.