

# Sibelius™:Sage

## The natural way to remember

### Key Benefits

Clinically validated cognitive benefits<sup>1</sup>

Patent Pending<sup>2</sup>

GRAS<sup>3</sup>

TFDA registered

Non-GMO

Standardised to 2.5% rosmarinic acid

Suitable for multiple delivery formats



### What is Sibelius™:Sage?

It is a branded, scientifically evidenced and clinically validated dried sage extract (*Salvia officinalis* L.), specially designed to **enhance memory and alertness and maintain cognitive health**<sup>\*</sup>. It derives from a proprietary, non-GMO cultivar of sage grown in the UK and is standardised to 2.5% rosmarinic acid. The sustainable source and well-controlled manufacturing process of Sibelius™:Sage ensures a safe and high-quality product.

### Why Sage?

Sage (*Salvia officinalis* L.) is a non-toxic European herb that has a long tradition for cognitive improvement dating back to the Middle Ages<sup>4</sup>. Clinical studies have demonstrated sage's cognitive enhancing effects on primary, secondary and working memory in both healthy young and elderly volunteers<sup>15</sup>. Sage extracts have been shown to inhibit acetylcholinesterase, an enzyme that breaks down esters of the neurotransmitter acetylcholine, which plays an important role in the formation of memories<sup>6</sup>. They also possess strong antioxidant and anti-inflammatory properties.

In addition, chronic administration has been shown to reduce cognitive decline in patients with Alzheimer's disease (AD)<sup>7</sup>.

### Clinical Studies

#### Improved memory and attention in older volunteers

The cognitive-enhancing properties of Sibelius™:Sage have been confirmed in Sibelius Natural Products' clinical study on 20 healthy elderly volunteers (65–90 years old). The administration of 167 mg and 333 mg of Sibelius™: Sage to healthy seniors, has shown to significantly improve their cognitive performance within 1 hour of treatment, including improvement of secondary memory — recognition and recall —, accuracy and speed of attention<sup>1</sup> (Fig. 1).

Figure 1

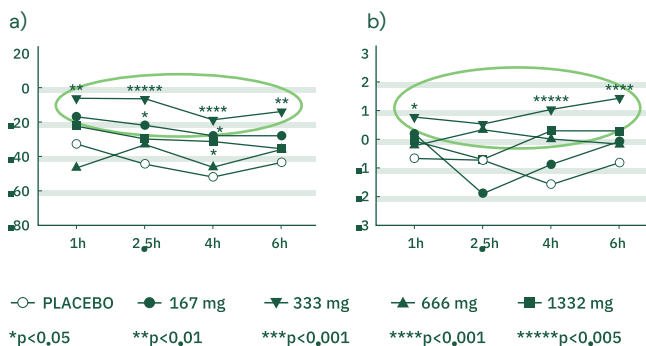


Figure 1. Effects of a standardized extract of *S. officinalis*, Sibelius™:Sage, (167, 333, 666, 1332 mg) and placebo on cognitive factors derived from CDR computerized assessment battery. Mean change from baseline scores are shown for a) secondary memory and b) accuracy of attention.

## S. officinalis better cognitive performance than S. lavandulifolia

In 2010, a clinical study of *Salvia officinalis* and *Salvia lavandulifolia* essential oils investigated the effect on cognition and mood in 135 healthy adults.

The *S. officinalis* group performed significantly better than the *S. lavandulifolia* and control groups on the quality of memory and secondary memory <sup>8</sup>.

## Improved cognitive performance in young adults

In a double blind, placebo controlled cross over study, 30 healthy participants (20 –29 years old) were given a *Salvia officinalis* extract or placebo and tested for stress, mathematical processing, word processing, response time, memory and mood. Improved mood and cognitive performance were noted after a single dose administration of 300 mg sage extract <sup>5</sup>.

## Other Studies

### Sibelius™:Sage, a unique ingredient

The challenge has been to identify the unique characteristics of Sibelius™:Sage over other sage extracts, obtained from different sources and extraction procedures. Using Chronoscreen™, Sibelius Natural Products' patented technology, we have been able to demonstrate that there is a significant difference in the biological activity of Sibelius™:Sage, over other sage extracts (Fig. 2).

Figure 2

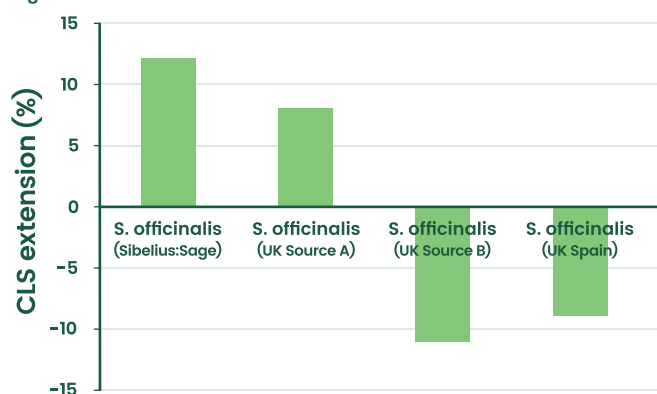


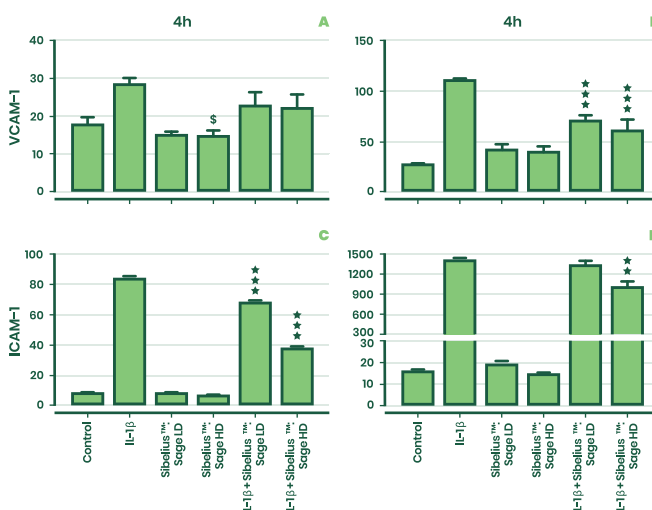
Figure 2. Chronological Life Extension (CLS Extension) is measured using Sibelius' patented Chronoscreen™ technology, and allows for the identification of biologically active natural products in the model organism *C. elegans*. Sibelius™:Sage shows increases in lifespan of around 10–15%.

## Anti-inflammatory Effects of Sibelius™:Sage

Circulating inflammatory markers, including the vascular injury markers Intercellular Adhesion Molecule-1 (ICAM-1) and Vascular Cell Adhesion Molecule-1 (VCAM-1), have been noted in patients with cognitive disease such as AD9–12. Sibelius™:Sage caused a significant reduction in the basal level of release of VCAM-1, as well as IL-1 $\beta$  induced conditions in human cells (Fig. 3 A & B). Sibelius™:Sage also caused a significant reduction in ICAM-1 in IL-1 $\beta$  induced in vitro (Fig. 3 C & D), as well as other inflammatory markers (data not shown).

Figure 3

Effects of Sibelius™:Sage on vascular injury markers.



VCAM-1 (A & B) and ICAM-1 markers (C & D) were tested in human adipocyte cells after 4h (A & C) or 24h (B & D) exposure to either a low dose (LD; 5 $\mu$ g/ml) or high dose (HD; 50 $\mu$ g/ml) of Sibelius™:Sage in the presence or absence of stimulation with IL-1 $\beta$  (0.5ng/ml).

## Awards & Certifications



### Citations

- Scholey A.B., et al. (2008), *Psychopharmacology*, 198: 127–139.
- Sibelius™:Sage Patent (pending): WO 2017/129987 A1, published August 3, 2017.
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\* 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.

### Sibelius Natural Products

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Hermes Consilium Ltd. is the official and exclusive distributor of Sibelius™:Sage in your region. We look forward to assisting you with more information on the ingredient or finished products, into which the ingredient is formulated.