

# Targeting Cognitive & Physical Performance

Neumentix™ is a naturally-sourced nootropic ingredient grown from patented spearmint lines\* selectively bred to be high in polyphenols. Targeted to support cognitive performance, this ingredient is redefining the approach to cognitive improvements, including focus and attention.

- ✓ Non-GMO Project Verified
- ✓ 16 Peer-Reviewed Scientific Publications



## HOW NEUMENTIX™ CAN HELP

Neumentix™ benefits support cognitive performance—specifically focus and working memory, without disrupting nighttime sleep—for healthy young adults<sup>4</sup> as well as older individuals with age-related memory issues.<sup>5</sup>

**Preclinical research suggests that these polyphenols are capable of improving cognitive performance in humans through at least four potential mechanisms of action<sup>6</sup>:**

### FEEDING A NEED

Cognitive performance is top of mind for many consumers, including younger consumers focused on managing a busy home and work life.<sup>1</sup>

**Cognitive performance can begin to decline** about 10% per decade starting as young as the 20s<sup>2</sup>



**47%** of consumers are actively managing mental focus with dietary supplements<sup>3</sup>



**REDUCE  
OXIDATIVE  
STRESS**



**PROMOTE  
NEW NEURONAL  
GROWTH**



**INCREASE  
NEUROTRANSMITTER  
LEVELS**



**PROTECT  
NEURONS IN  
THE BRAIN**

## GROWN IN THE USA

First, Kemin identified rosmarinic acid as an important phytochemical with neuroprotective properties. Then, we identified *Mentha spicata* as a natural source of rosmarinic acid and other phenolic compounds. We screened more than 5,000 lines of spearmint before using traditional plant breeding methods to develop two patented lines of spearmint, K110 and K42.\*



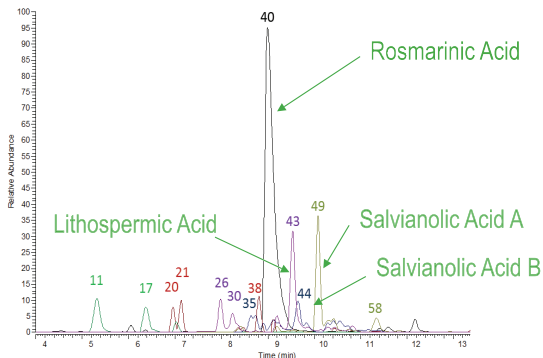
## A UNIQUE COMBINATION OF ANTIOXIDANTS

The antioxidant polyphenols in Neumentix™ may promote new nerve cell growth and support a function of the brain called working memory, thus improving the ability to focus, learn, manage information and react.



## NEUMENTIX™ NATURALLY CONTAINS MORE THAN 50 POLYPHENOLS WORKING TOGETHER TO CONTRIBUTE TO ITS CLINICAL BENEFITS, INCLUDING THESE PHENOLICS:

- rosmarinic
- lithospermic
- salvianolic
- caftaric



Polyphenolic Chromatogram of Neumentix™ Phenolic Complex  
K110-42 UHPLC-MS Method of Analysis  
Kemin Internal Document 14-00171

## Why are both working memory and attention important?

Attention and working memory are linked. While attention allows the information to be taken in, working memory is the short-term memory system that **allows temporary storage and manipulation of information.**<sup>7</sup> Both are critical to a wide range of cognitive tasks. There's also evidence to show working memory **supports physical performance, such as agility and reaction time.**<sup>8,9,10</sup>

## NEUMENTIX™ IS SUPPORTED BY:

**4** HUMAN CLINICAL TRIALS

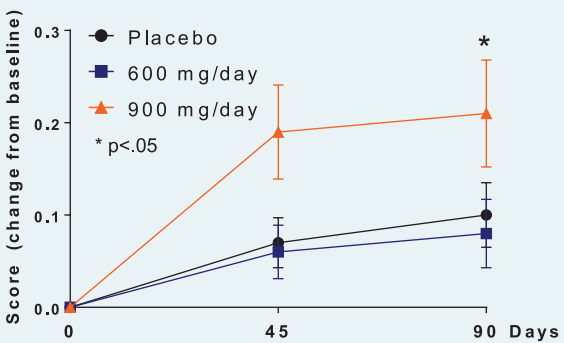
**16** PEER-REVIEWED SCIENTIFIC PUBLICATIONS

# THIS EXCITING INGREDIENT IS CLINICALLY SHOWN TO TARGET COGNITIVE AND PHYSICAL BENEFITS, BY CONNECTING FOCUS AND REACTION PERFORMANCE.

## COGNITIVE PERFORMANCE

**Neumentix™ naturally supports working memory and attention**, the parts of short-term memory that allow for the storage and manipulation of information while working on another task.

**Quality of Working Memory in Age Associated Memory Impairment Population**  
Herrlinger et al. (2018). *The Journal of Alternative and Complementary Medicine* 24 (1): 37-47, Kemin Internal Document 15-00146



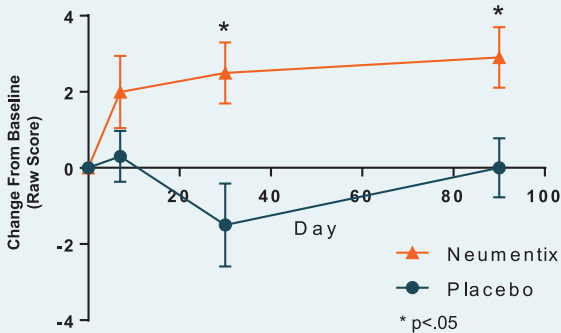
Working memory benefit shown in a randomized, double-blind, placebo-controlled clinical trial where healthy participants 50-70 years old with age-associated memory impairment (AAMI) took either a placebo or 600 mg or 900 mg of Neumentix™ for 90 days.



**15%**  
improvement  
in working  
memory<sup>#11</sup>

**11%**  
improvement  
in sustained  
attention<sup>#12</sup>

**Sustained Attention Composite in Healthy Population**  
Falcone et al. 2019. *Nutr Res.*;64:24-38  
Falcone et al. 2018. *J Int Soc Sports Nutr.* 15(1):58

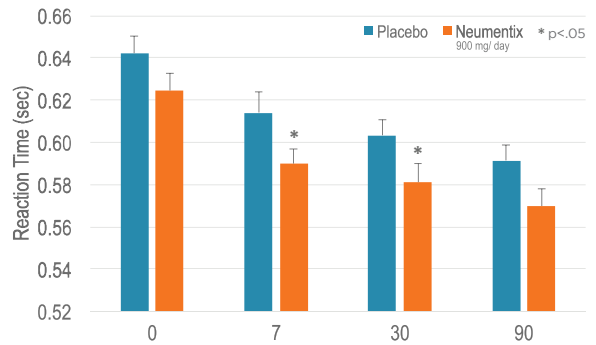


Working memory benefit shown in a randomized, double-blind, placebo-controlled clinical trial where healthy participants took either placebo or 900 mg of Neumentix™ for 90 days.

## FOCUS AND REACTION PERFORMANCE

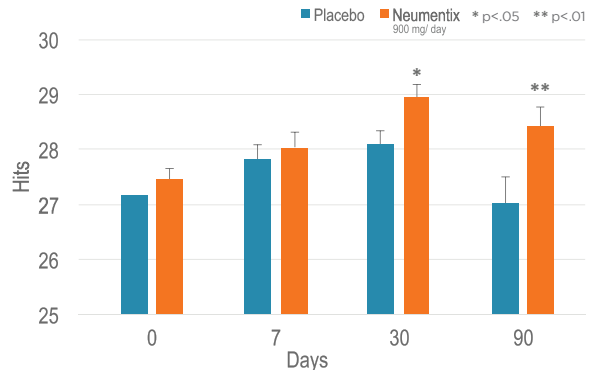
**Neumentix™ naturally promotes cognitive and physical performance improvement** in healthy adults.

Researchers found that participants taking Neumentix™ had significantly higher scores in sustained attention as well as physical choice reaction time, and improvements in the number of hits versus placebo.<sup>13</sup>



**One Tower Test with Footplate – Healthy Population**

Falcone et al. 2019. *Nutr Res.*;64:24-38  
Falcone et al. 2018. *J Int Soc Sports Nutr.* 15(1):58



**One Tower Test with Footplate – Healthy Population**

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Cognitive and physical performance improvement is shown in a randomized, double-blind, placebo-controlled clinical trial where healthy, recreationally active participants around 27 years old took either placebo or 900 mg of Neumentix™ for 90 days. Physical performance was assessed with a novel 360-degree mobility testing device called the Makota Arena I, while cognitive performance was measured using a computerized cognitive test battery.

**5%**  
improvement  
in hit rate<sup>#15</sup>

Improvement  
in reaction time  
starting after  
**7 DAYS**<sup>#14</sup>



#Calculated as a change from baseline within the Neumentix group minus the change from baseline with the placebo group. \*p<.05, \*\*p<.01  
#Neumentix led to an 11% increase in sustained attention from baseline, significant compared to placebo. p<.05  
#Average reaction time for the stationary test with footplates significantly lower in Neumentix group versus placebo. \*p=.049

## INCREASING POTENTIAL

Neumentix™ has the potential to meet the growing demand for dietary supplements, functional food and beverages that can naturally help people increase their focus and productivity throughout the day.

## PROVEN SAFETY

Neumentix™ polyphenol-rich spearmint (standardized to 14.5% rosmarinic acid and 24% total polyphenols) is Generally Recognized as Safe (GRAS) and well tolerated in healthy adults, as measured by blood safety panels, vital signs, biomarkers, and monitoring of adverse events.<sup>16,17,18</sup>

## KEMIN QUALITY

Kemin has developed Neumentix™ from patented non-GMO spearmint plant lines\* grown on family farms in the USA in accordance with good agricultural and sustainable farming practices. Neumentix™ is certified SCS Sustainably Grown.

**A sustainably cultivated crop has a managed life cycle with minimal inputs, using Good Agricultural Practices, as opposed to botanicals harvested in the wild, a non-sustainable practice with potential negative ecological impacts and inconsistent extraction quality.**

**Our partnership with nature and our growers—and strong commitment to sustainable crop production—is truly good for people and our planet. Sustainability is more than a destination—it is an ongoing journey we have all committed to, at Kemin.**

### CONTACT US:

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The SCS Global Services Sustainably Grown program recognizes leadership in environment stewardship, social responsibility and economic stability. It is consistently ranked among the highest social and environmental standards.

This recognition of Kemin and its growing partners follows a rigorous third-party audit and assessment by SCS, ongoing annual audits and continuous improvement practices are required to maintain certification.

- ✓ GRAS
- ✓ Gluten free
- ✓ Kosher
- ✓ Allergen free
- ✓ HALAL
- ✓ Non-GMO
- ✓ Vegan/Vegetarian
- ✓ Naturally and sustainably sourced

### THESE SPECIAL PLANTS UNDERGO A CAREFUL PROCESS AS THE SOURCE FOR THIS INNOVATIVE, DIETARY INGREDIENT:



The native polyphenolic profile of the **spearmint leaves** is preserved using a patented drying process\*\*



A gentle **water-extraction method** maintains the natural phenolic constituents



The resulting extract is dried and undergoes **rigorous quality testing** prior to release