

# Make American Ginseng Great (Again)

## Company

Naturex

## Problem/opportunity

A series of clinical trials by Scholey and colleagues have demonstrated cognitive benefits from Asian ginseng (*Panax ginseng*) [1-6]. American ginseng (*Panax quinquefolius L.*) contains a different balance of ginsenosides - the active components of Ginseng - to Asian ginseng (*Panax ginseng C.A.Mey*). Could these have cognitive benefits?

## Solution

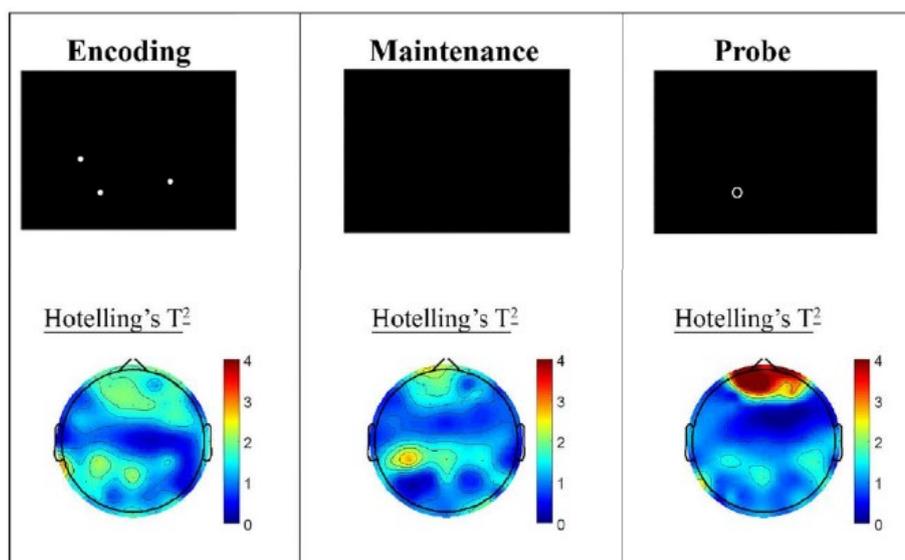
Two randomised placebo-controlled trials examining the mood and cognitive effects of a *Panax quinquefolius* extract.

## Our role

We oversaw two studies of the mood and cognitive effects of a high quality extract of American ginseng (Cereboost®). One in healthy young adults [7] leading to a second study in healthy middle-aged adults [8] (including neuroimaging in a subset of participants [9]).

## Outcomes

- We found improvements to working memory and mood in healthy young adults [7] in comparison with placebo in the Cereboost® arm.



- In a follow-up study in middle aged adults, we confirmed improvements to working memory [8], demonstrating that the benefit generalises to a slightly different population.
- The follow-up study also demonstrated increased activation of frontal regions in the ginseng condition [9] (below) when participants used spatial working memory to remember locations.
- Cereboost® is now used in a number of functional foods for brain health including a Nature's Own product in Australia.

## References

1. Kennedy DO, Haskell CF, Wesnes KA, Scholey AB (2004) Improved cognitive performance in human volunteers following administration of guarana (*Paullinia cupana*) extract: Comparison and interaction with *Panax ginseng*. *Pharmacology Biochemistry and Behavior* **79**, 401-411.
2. Kennedy DO, Scholey AB (2003) Ginseng: Potential for the enhancement of cognitive performance and mood. *Pharmacology Biochemistry and Behavior* **75**, 687-700.
3. Kennedy DO, Scholey AB, Drewery L, Marsh VR, Moore B, Ashton H (2003) Electroencephalograph effects of single doses of *Ginkgo biloba* and *Panax ginseng* in healthy young volunteers. *Pharmacology Biochemistry and Behavior* **75**, 701-709.
4. Kennedy DO, Scholey AB, Wesnes KA (2001) Dose dependent changes in cognitive performance and mood following acute administration of Ginseng to healthy young volunteers. *Nutritional Neuroscience* **4**, 295-310.
5. Kennedy DO, Scholey AB, Wesnes KA (2001) Differential, dose dependent changes in cognitive performance following acute administration of a *Ginkgo biloba*/*Panax ginseng* combination to healthy young volunteers. *Nutritional Neuroscience* **4**, 399-412.
6. Kennedy DO, Scholey AB, Wesnes KA (2002) Modulation of cognition and mood following administration of single doses of *Ginkgo biloba*, ginseng, and a ginkgo/ginseng combination to healthy young adults. *Physiology and Behavior* **75**, 739-751.
7. Scholey A, Ossoukhova A, Owen L, Ibarra A, Pipingas A, He K, Roller M, Stough C (2010) Effects of American ginseng (*Panax quinquefolius*) on neurocognitive function: An acute, randomised, double-blind, placebo-controlled, crossover study. *Psychopharmacology* **212**, 345-356.
8. Ossoukhova A, Owen L, Savage K, Meyer M, Ibarra A, Roller M, Pipingas A, Wesnes K, Scholey A (2015) Improved working memory performance following administration of a single dose of American ginseng (*Panax quinquefolius* L.) to healthy middle-age adults. *Human Psychopharmacology* **30**, 108-122.
9. White DJ, Camfield DA, Ossoukhova A, Savage K, Le Cozannet R, Faça-Berthon P, Scholey A (2020) Effects of *Panax quinquefolius* (American ginseng) on the steady state visually evoked potential during cognitive performance. *Human Psychopharmacology: Clinical and Experimental* **35**, 1-6.

## Tags

Cereboost®, American ginseng, *Panax quinquefolius*, working memory, mood, clinical trial, neuroimaging, Naturex