

Short Communication

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Claims for Butterfly Pea Flower Extract as a Repairer of Memory and other Problems Appear to have some Validity

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A few months ago, this journal published a note by me on my experience taking butterfly pea flowers extract (Blue tea) for memory loss [1]. My experience was so positive I hoped other people would try this. I also explored its mechanisms. AI did a marvelous summary of the literature for me and reported the information below.

Butterfly Pea Flower & Alzheimer's: Evidence Summary.

This document provides a clean, structured, easy-to-scan summary of the neurological and Alzheimer's related findings on Clitoria Ternatea (Butterfly Pea Flower). It includes study types, key findings, mechanisms, and relevance to Alzheimer's disease.

Butterfly Pea Flower & Alzheimer's: Evidence Summary Table

Study Type	Model / Method	Key Findings	Mechanisms Identified	Relevance to Alzheimer's
In vivo (animal)	Rodent Alzheimer's models	Improved memory, reduced anxiety, restored antioxidant enzymes	↑ Antioxidant activity, ↓ oxidative stress	Oxidative stress is a major driver of neuronal loss in AD
In-vivo (animal)	Chronic cerebral hypoperfusion (dementia model)	Enhanced hippocampal neuroplasticity, improved learning	↑ Neurogenesis, ↑ synaptic plasticity	Supports cognitive resilience in early dementia
In vivo (zebra fish AD model)	Amyloid-induced cognitive impairment	50% memory improvement, increased Purkinje cells, reduced anxiety	Structural brain protection	Demonstrates functional and anatomical improvements
In-vitro	Neuronal cell cultures	Protection against neurotoxicity	Antioxidant, anti-inflammatory	Suggests direct neuronal protection
In-silico	Molecular docking with AChE	Strong acetylcholinesterase inhibition	AChE inhibition	Same mechanism as donepezil, rivastigmine
In-silico	Docking with BACE1 (β-secretase)	Strong binding affinity of compounds like Clitorin	BACE1 inhibition	BACE1 is essential for amyloid plaque formation
In-silico	Amyloid fibril simulations	Cyclotides destabilize β-amyloid fibrils	Anti-amyloid aggregation	Potential to reduce plaque formation
Phytochemical analysis	Extract profiling	Rich in anthocyanins, flavonoids, cyclotides	Antioxidant, anti-inflammatory, neuroactive	Supports multi-pathway neuroprotection
Traditional medicine + modern review	Ayurvedic medhya rasayana	Cognitive enhancement, stress reduction	Cholinergic modulation	Aligns with AD's cholinergic deficit

Mechanisms at a Glance

Mechanism	Effect	Why It Matters for Alzheimer's
AChE inhibition	Increases acetylcholine	AD involves severe cholinergic loss
BACE1 inhibition	Reduces amyloid β production	BACE1 drives plaque formation
Anti-amyloid aggregation	Destabilizes fibrils	May slow plaque accumulation
Antioxidant activity	Protects neurons	AD brains show high oxidative stress
Anti-inflammatory effects	Reduces neuro-inflammation	Chronic inflammation accelerates AD
Neuroplasticity enhancement	Supports learning & memory	Helps compensate for early cognitive decline

Overall Interpretation

Butterfly Pea Flower shows multi-pathway neuro-protective effects highly relevant to Alzheimer's disease:

- ✓ Protects neurons - ✓ Enhances memory - ✓ Reduces oxidative stress - ✓ Modulates cholinergic pathways - ✓ Interferes with amyloid formation.

"But and this is crucial all evidence is preclinical. There are no human trials, no approved therapeutic use, and no standardized dosing."

That apparently there have been no human trials yet concerned me. Ayurvedic doctors as long as 300 years ago were using the extract as a "brain tonic" and some people have it as a beverage as a normal part of their meals. I decided to do a small trial myself.

I wished to collect 15 subjects over age 65 who were having memory problems. This was not as easy as I hoped. Aged care homes ignored my approach to talk to their residents and though some GP's were interested none of them were able to suggest this to some of their patients "for ethical reasons", sic!

I advertised in shops with promising outcome, but some of the would-be volunteers were not able enough to see me or were out of town seeing to children and grandchildren or even had work commitments. Others were below the age range and just wanted some reassurance about the histories of senescence in their families. So, after starting with 19 subjects I finished with only 10, who were mostly more mentally intact than average for their age but curious.

The trial was a before and after assessment of subjects, taking the "Blue tea" for more than a month, with the Montreal Cognitive Assessment version 8.3. I had wondered about possible contamination by coaching effects but these are dependent on recall, which we were testing. As two of the subjects scored the same on both testings and two others scored one point lower suggested that there was no practice effect at all. The extract was made daily by soaking no more than 5 flowers in 300mls to 500mls of hot water (70 to 80 degrees c.) for 3 minutes. The ages of the 10 people ranged between 68 and 88 years. There were 6 women and 4 men.

Results

Case Number:	1	2	3	4	5	6	7	8	9	10
Gender: (M, F = Male or Female)	F	F	F	F	M	M	M	F	F	M
Pre-test scores were:	22	25	28	27	26	28	25	25	28	20
Post-test scores were:	25	27	30	30	28	27	24	25	28	20

A t test for a paired sample (SPSS 27) yielded $t=0.037$ (one tailed). Cohen's Eta Squared = 0.313.

These yields were significant and substantial [2]. That is half the sample showed improvement three showed no change and two had some loss. This last may well be due to function fluctuation rather than a permanent loss given the variability of reliability in published studies. Direct improvement in memory was not the only positive change with some claiming to feel better from having more energy.

In my country about 500 people each week are diagnosed with dementia, sixty percent of those have, or may soon have, Alzheimer's disease. World wide its numbers are in the millions. If this treatment proves to be effective in the general community it will enhance the later lives of a great number of people immeasurably and may even extend their lives as well. I am publishing this study in the hope that other people with more resources and time than me will be tempted to try it themselves with a much larger sample and perhaps a more appropriate mental state test. The Montreal Test has a number of weaknesses – including probable

irregularities in the intervals between numbers in the marking scale, a very compressed ceiling in the range of marks and the appropriateness of some items - such as the date. Nevertheless, it was able to demonstrate a significant and substantial effect.

I am most indebted to the people of Nelson, NZ, those who took part and to the several shops who advertised for participants for me.

References

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