

## The Combined Extract of *Zea Mays* (Purple Color) and *Pandanus Amaryllifolius* Based-Drink (MP1) Improves Working Memory and Psychological Fitness in Menopausal Volunteer

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**Background and Objective:** Memory impairment is one of the common health problems in menopausal women. Due to the therapeutic efficiency limitation, the searching for the protective intervention for this condition is required. Based on the previous findings that the combined extract of *Z. mays* (purple color) and *P. amaryllifolius* based-drink (MP1) could attenuate memory impairment in animal model of menopause, we aimed to investigate the effect of MP1 functional drink on working memory, psychological fitness and the consumption safety in menopausal volunteers.

**Materials and Methods:** Thirty-two participants including perimenopausal women and postmenopausal women were recruited and assigned to receive the functional drink "MP1" at the dose of 400 mg or placebo once daily for 8 weeks. All participants were evaluated for cognitive function and working memory using the auditory oddball paradigm of event-related potentials and computerized battery tests at 3 different periods including before the intervention, 4 weeks and 8 weeks of intervention. Emotion and groups of psychological disorders were used as the indices of psychological fitness and these parameters were also evaluated using

Bond-Ladder test and Symptom checklist 90 (SCL-90) respectively while the safety evaluation of MP1 consumption was performed using the alteration of electrocardiogram (EKG), hematology and clinical chemistry changes together with the adverse events report as indices.

**Result:** It was found that the participants in MP1 treated group significantly decreased both P300 and N100 latencies and the reduction of P300 latency was still observed at 8 weeks of intervention period. The improved somatization was also observed at 8 weeks of intervention. No signs of toxicity and adverse event related to the effect of "MP1" were observed throughout the study period.

**Conclusion:** The present study has demonstrated the positive modulation effect of MP1 drink on working memory and consumption safety in menopausal women. Therefore, MP1 is a potential cognitive enhancement product for menopausal women.

**Key word:** MP1, working memory, menopausal women, *Z. mays*, *P. amaryllifolius*

