Long-term effects of bovine milk α_{S1}-casein hydrolysate (PRODIET™ F 200) on healthy low and high stress responders

CRSSA (La Tronche, FRANCE)

Protocol approved by the CCPPRB Grenoble II (number 2116S) - Conform to the Helsinki Declaration of 1975 revised in 1983

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INTRODUCTION

The objective of this investigation was to study whether the lowering stress effect, observed on healthy women after a 30 day intake of PRODIET™ F200, was different in Low (LSR) and High (HSR) Stress Responders. LSR and HSR were classified by their cardiovascular stress response and their trait-STAI score on D0.

METHODS

Randomized, double-blind, placebo controlled, 26 healthy women in two parallel groups.

Test

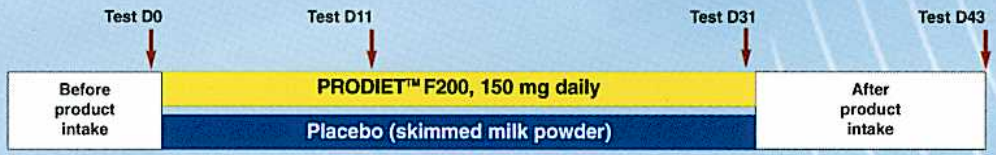
> Mental stress: Stroop test

Studied parameters

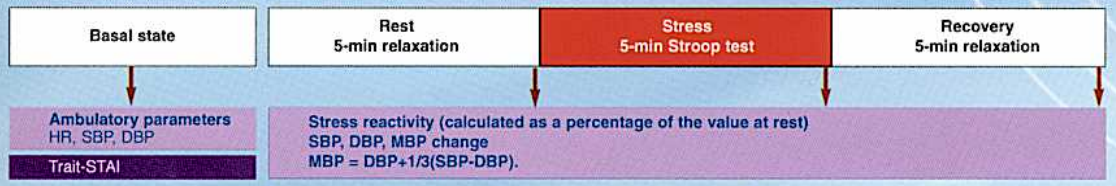
> Systolic (SBP) Diastolic (DBP) and Mean (MBP) blood pressure
> Heart Rate (HR)

> Chronic anxiety level (Spielberger Trait-anxiety inventory): Trait-STAI

Study design



Test design: identical procedures on D0-D11-D31-D43

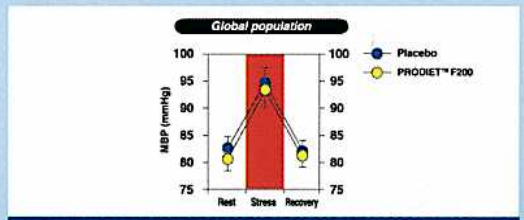


Data are shown as mean ± SEM. Comparison on D0 is made using non parametric two-sample Wilcoxon test.
Product intake effect is evaluated on D11 and D31 by repeated measure ANCOVA with D0 values as a covariate.

Subjects were classified into Low (LSR) and High (HSR) Stress Responders using the k-means classification method.

RESULTS

• ***D0:*** *before product intake*



The Stroop test induces a stress, which in turn generates MBP activation. The MBP measure is a stress reactivity level indicator.

***, p<0.001
**, p<0.01

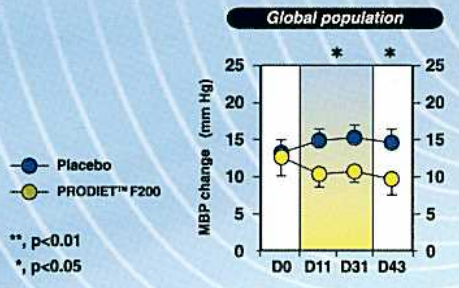
At D0	LSR (n=16)	HSR (n=10)
SBP change (mm Hg) (stress reactivity)	13.0 ± 1.4	26.4 ± 3.6**
Trait-STAI	33.0 ± 1.4	46.2 ± 2.6***

• ***Product intake effect:*** *placebo or PRODIET™ F200*

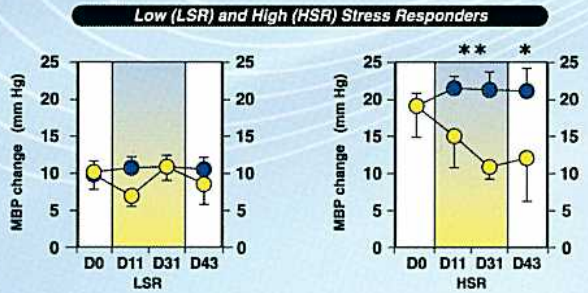
- Basal state (before stress test)

No significant effect was observed on the basal parameters (HR, SBP, DBP and trait-STAI).

- Stress reactivity



PRODIET™ F200 reduces significantly (p = 0.03) the MBP change on D11 and D31 in global population. On D43, the effect remains significant.



PRODIET™ F200 reduces significantly (p = 0.007) the MBP change on D11 and D31 in HSR population. On D43, the effect remains significant.

CONCLUSION

A 30 day chronic oral intake of bovine milk α_{S1}-casein hydrolysate (PRODIET™ F 200) significantly decreases the MBP change during the Stroop test on D11 and D31 in global and High Stress Responder populations. This effect remains significant on D43. PRODIET™ F200 has no side effects on basal parameters.

PRODIET F 200

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