Naticol®
Fish Collagen Peptides

Weight management*

Modern lifestyle characterized with permanent lack of time results both in consumption of a highly processed foods rich in fat, salt or/ and sugar and poor physical activity which do not have any beneficial effects on our health: overweight, hyperglycemia, insulin-resistance, hypercholesterolemia.

WELL-BEING

Naticol® has demonstrated its role as natural ingredient for weight management.

ANIMAL MODEL STUDY - PROTOCOL AND RESULTS

This in vivo study* was conducted by INSERM-I2MC (National medical Research institute, France) and carried on male mice C57Bl/6 (9 weeks old) for 9 and 18 weeks. The study objective was to evaluate the effects of an oral intake of Naticol® fish collagen peptides (daily diet containing 2,5% of Naticol®) on body weight composition, serum insulin, glycemia and cholesterolemia of mice fed with a high-fat diet (HFD). When fed a High Fat Diet (HFD), energy content of the diet was (percent kilocalories): 20% protein, 20% carbohydrate, 60% fat.

**G. Astre et al. (2018) Diet-induced obesity and associated disorders are prevented by natural bioactive type 1 fish collagen peptides (Naticol®) treatment. Journal of Physiology and Biochemistry*

Weishardt
Rond-Point Georges Jolimaître BP 259 - 81305 Graulhet Cedex - FRANCE
Tel : + 33 (0)5 63 42 14 41
www.naticol.com www.weishardt.com
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›Body weight composition

In the HFD group, Naticol ® supplemented diet demonstrated a significant lower increase in body weight as soon as the week 12 of treatment (figure 1). Additionally, a lower increase in fat mass in High fat fed mice supplemented with Naticol® at both 9 and 18 weeks of treatment was observed (*figures 2: 2a, 2b, 2c*).

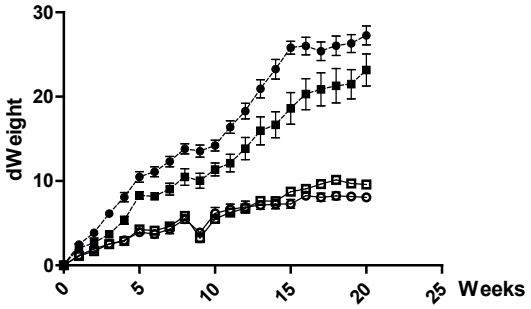

***Figure 1** : Variation in body weight time course of either chow (empty symbols) and high fat (full symbols) fed (CD and HFD respectively) mice supplemented with Naticol® (circles) or not (squares). Data are presented as mean±sem (n=6).*

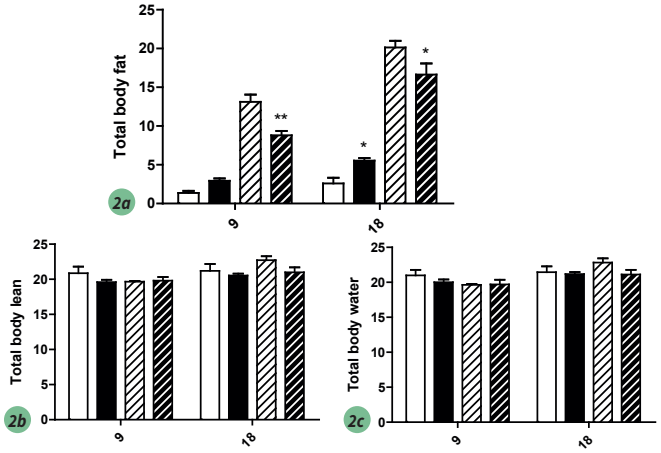

***Figure 2** : Assessment of body composition in mice (hatched bar when high fat fed) supplemented 9 and 18 weeks with Naticol® (black bars) or not (white bars). Fat stores (Fig 2a), lean mass (Fig 2b) and total water (Fig 2c) are presented as mean±sem (n=6).*

›Glycemia

Regarding carbohydrate parameters, *figure 3* shows a lower rise in plasma glucose levels in HFD groups when Naticol®-supplemented (see Fig 3a), a slight but not significant decrease in insulinemia was found in the same groups.

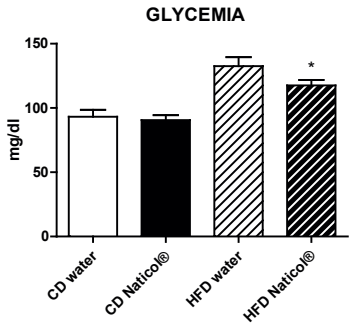

***Figure 3:** Blood carbohydrates in mice (hatched bar when high fat fed) supplemented 20 weeks with Naticol® (black bars) or not (white bars). Plasma glucose (Fig 4) is presented as mean±sem (n=6).*

›Cholesterolemia

In HFD, a clear decrease in plasma cholesterol levels was observed for the Naticol®-supplemented group (*Figure 4 a*).

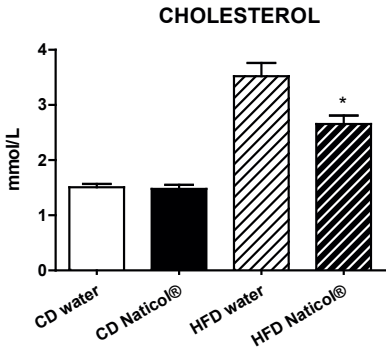

***Figure 4:** Blood lipids in mice (hatched bar when high fat fed) supplemented 20 weeks with Naticol® (black bars) or not (white bars). Plasma cholesterol (Fig 4) is presented as mean±sem (n=6).*

›Inflammatory cytokine levels: IL-1β/ IL-6

IL-1 and IL-6 are pro inflammatory cytokines.
In Naticol®-supplemented groups, the inflammation-related genes, IL-1β and IL-6, were decreased in HFD groups.

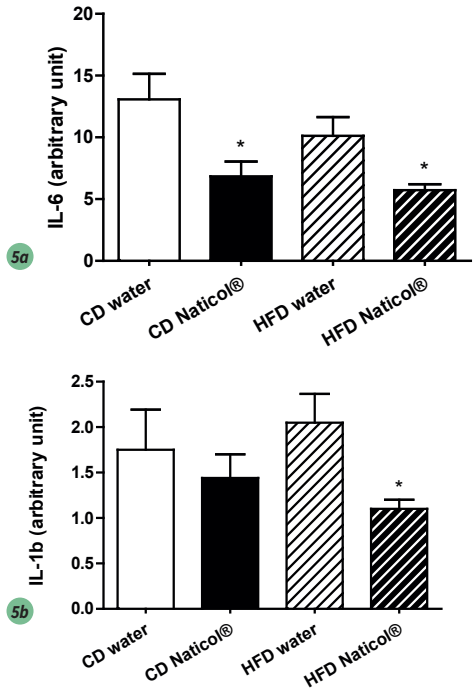

***Figure 5:** Gene expression profile in mice (hatched bar when high fat fed) supplemented 20 weeks with Naticol® (black bars) or not (white bars). Interleukin-6 (Fig.5a) and Inteleukin-1β (Fig 5b) are presented as mean±sem (n=6).*

›Conclusion

The results of oral ingestion of Naticol® on a daily basis, showed that regular intake of Naticol® Fish collagen peptides may improve the cholesterol levels, help to support normal blood glucose and weight management..
In this study, Naticol ® has demonstrated its role as natural ingredient for weight management.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

The claims related to beneficial effects of the ingredient Naticol® on health and nutrition, as mentioned in this document, are substantiated by results of scientific studies, but are not all covered by the requirements of the European regulation 1924/2006/EC. It is the responsibility of the marketer of foodstuffs and food supplements containing Naticol® to comply with this regulation.

VB -January 2023