



## **STUDY OF THE INFLUENCE OF GLUTEN ON INTESTINAL OXIDATIVE PARAMETERS OF MICE**

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### **INTRODUCTION**

Gluten can be defined as a set of alcohol-soluble proteins present in wheat, rye and barley. Structurally, it is formed by a complex network of proteins, especially gliadin and glutenin, which play an essential role in baked goods. Celiac Disease is a chronic systemic and autoimmune disorder, which affects the small intestine of genetically predisposed children and adults, triggered by the ingestion of foods containing gluten and which mainly affects the intestine of these individuals, resulting in a worsening of the general condition. Non-celiac Gluten Sensitivity is a syndrome characterized by intestinal and extra-intestinal symptoms related to the ingestion of foods containing gluten, in individuals not affected by allergic or autoimmune mechanisms. The present study aims to evaluate oxidative stress parameters in the duodenum and colon of healthy animals exposed to gluten-rich or gluten-free diets.

### **MATERIAL AND METHODS**

For this purpose, C56bl/6j mice (females, N:7-10) were divided into groups: G: diet enriched with 75% gluten (DEG), G2: normal diet (Nuvilab®- NDN) and G3: gluten-free diet (GFD). After euthanasia, samples from the duodenum and colon were taken for biochemical assays (CEUA:005/20).

### **RESULTS**

In our results, it was possible to observe that in mice fed with GFD there was an increase in GSH levels, which is an important antioxidant tripeptide of the duodenal mucosa, in this group GST activity was decreased and there was a 5% increase in SOD activity, demonstrating the maintenance of antioxidant defense. However, gluten exclusion increased duodenal and colonic MPO activity, an important marker of neutrophil migration, indicating increased local inflammation. In mice that consumed DEG, there was an increase in MDA levels in the duodenum and colon, which is an important marker of tissue damage, while antioxidant defense parameters were not preserved.

### **CONCLUSIONS**

Thus, our preliminary results indicate that the consumption of gluten in low quantities does not cause harm to healthy mice, since when exposed to GFD it seemed to favor inflammatory processes and DEG promoted an increase in membrane lipoperoxidation. Reinforcing that the gluten-free diet is recommended for people with celiac disease, who experience signs and symptoms inherent to the pathology.

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