Effects of oral administration of ω-3 eicosapentaenoic fatty acid (EPA) on wound healing in mice

Beatriz Burger (IC), Carolina M. C. Kühl (PG), Mariah B. P. dos Anjos (IC), Thamiris Candreva (IC), Hosana G. Rodrigues (PQ)

Abstract
The aim of this study was to determine the effects of intake of oil rich in eicosapentaenoic fatty acid (EPA) on the wound healing process in non-diabetic and diabetic mice by macroscopic analysis of wound closure and quantification of tissue cytokines.

Key words: cytokines, wound healing, fatty acids

Introduction
Diabetes present changes in the inflammatory response1, making the diabetic patients susceptible to impairment of tissue repair2. ω-3 fatty acids EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), have been studied in diseases characterized by excessive inflammation3, and the results indicate that these fatty acids modulate the immune system through the production of lipid and protein mediators involved in inflammation4

Results and Discussion

Figure 1. Methodology

Figure 2. Wound area (%) at 1, 3, 7 and 10 days after wound induction in (C) control animals; (D) diabetic animals; (E) animals that received orally 50 uL of EPA; (ED) diabetic animals that received orally 50 uL of EPA. Values are expressed as mean ± standard error of the mean. (*) Significant difference from C; (#) Significant difference from D. Differences were considered significant when p <0.05.

Conclusions
As preliminary conclusions, we observed that diabetic animals supplemented with 50 uL of EPA had delayed wound healing which may be related to an anti-inflammatory effect at the beginning of tissue repair.

Acknowledgement


DOI: 10.19146/pibic-2015-37056

XXIII Congresso de Iniciação Científica da UNICAMP