

## Plasmatic Oxidative Status of Diabetic Rats Treated With Fiber From *Passiflora edulis* Fruits

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Dietary fiber isolated from passion fruit is associated with a reduced risk of cardiovascular diseases, including ischemic heart disease, stroke, peripheral arterial disease, hypertension, and atherosclerosis. The purpose of this study was to evaluate plasmatic biomarkers of oxidative status on diabetic rats treated with passion fruit fibers. Male Wistar rats (n=30) were divided into five groups receiving chow and water, passion fruit pee fibers, 50, 100, and 150% of dietary recommended intake (DRI) fibers. After 28 days diabetes induction (intraperitoneal aloxan injection), animal plasma were collected following determinations of glucose. We therefore investigated malonaldehyde (MDA), and the protein carbonyl (PC) contents, both markers of oxidative stress on lipid and protein structures, respectively. MDA was determined by HPLC using a fluorescence detector ( $\lambda_{\text{ex}}532\text{nm}$ ,  $\lambda_{\text{em}}553\text{nm}$ ), and PC groups were determined by reactions with 2,4-dinitrophenylhydrazine ( $\lambda_{370\text{nm}}$ :  $22.000 \text{ M}^{-1}\text{cm}^{-1}$ ). Analysis of oxidized albumin in a partially purified fraction obtained by affinity column chromatography was done using SDS-PAGE to investigate the formation of albumin disulfide dimers associate to diabetes. Significant decreases in glycemic values were observed in the groups treated with 50 ( $147.0 \pm 24.8 \text{ mg/dL}$ ), 100 ( $153.5 \pm 22.8 \text{ mg/dL}$ ) and 150% ( $151.6 \pm 20.8 \text{ mg/dL}$ ) DRI fiber, as compared to the diabetic control group ( $340.7 \pm 163.8 \text{ mg/dL}$   $p < 0.001$ ). The results depicted no mean differences between groups in MDA levels. However, PC and albumin disulfide dimers formation was observed in greater levels (45%) in diabetic animals than in controls ones. Both oxidative markers were slowly reduced due to 150% DRI passion fiber ingestion. These data suggest the use of passion fruit fibers as a supplementary approach in diabetes treatment.

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