ANTIOXIDANT ACTIVITY AND ACUTE TOXICITY OF CHAÑAR FRUITS (Geoffroea decorticans)

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INTRODUCTION
Studies of the medical folklore of Northwestern Argentina are of great ethnomedicine value. The fruits of Geoffroea decorticans (Fabaceae) are used for both culinary and medical purpose (1). The aim of the present work was determined the total phenolic and flavonoid contents and antioxidant activities of extracts of chañar fruits. It was investigated the possible toxic effect on rats.

MATERIALS AND METHODS
Geoffroea decorticans fruits are collected in Santiago del Estero. The fruits were soaked in ethanol (70%) and water to prepared the respectively extracts.

Phenolic content (Folin-Ciocalteau method) (2) and flavonoids content (Ciou Jhih-Ying et al method) (3) were determined. Antioxidant activity by β carotene bleaching method, free radical scavenging activity by 1,1 diphenyl 2 picrylhydrazil (DPPH) assay.

The acute toxicity was evaluated in Wistar rats. The animals were divided into six groups (n=5). The controls groups received orally water and ethanol (70%) respectively. The other groups received 1800 and 3600 mg/kg body weight of test extracts equivalent to 100 times the human use. The animals were observed for 1, 2, 4, 6, 24, 48 hours up to 14 days.

RESULTS
The phenolic content of the ethanol extract was 6.78 mg/g and the acqueous extract was 20.61 mg/g, all as mg gallic acid/100 g dry weight respectively.

The flavonoid content of the ethanol extract was 11.15 mg/g and the acqueous extract was 26.23 mg/g, all as mg Quercetin/100 g dry weight respectively.

The scavenging effect of acqueous and ethanol extracts on DPPH radicals were 94.59 %, 94.71 % at a concentration of 10 mg/ml, respectively, indicating that both extracts showed similar DPPH radical scavenging activity. The ethanol (76.60 %) and acqueous (83.20 %) extracts (10 mg/ml) were effective in inhibiting the oxidation of linoleic acid and subsequent bleaching of β carotene.

No toxic symptoms or death were observed in the animals after oral administration of different doses of the extracts. No changes were observed in body weight, food and water intake. When the emotionally parameters such us the number of grooming and faecal boluses were analyzed, no significant differences between the control and the experimental group was detected. Pathological examinations of the tissues on a gross basis showed no detectable abnormalities.

CONCLUSIONS
Fruits acqueous and ethanol extracts showed good antioxidant activity. No toxic symptoms or mortality was observed in 14 days of study in rats. The results support the traditional culinary and medicine uses.

REFERENCES

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