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RICiFa 3era Reunión Internacional de Ciencias Farmacéuticas

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RICiFa 2014

3rd International Meeting on Pharmaceutical Sciences
18-19 september, 2014
Córdoba, Argentine

Organized by:

FCQ Facultad de Ciencias Químicas

UNC Universidad Nacional de Córdoba

Co-organized by:

FCBF Facultad de Ciencias Bioquímicas y Farmacéuticas

Universidad Nacional de Rosario

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Cámara de Farmacias de la Provincia de Córdoba – Trabajando juntos, progresamos todos

JENCK

BRIEF REPORT ABOUT THE MEETING

The "3rd International Meeting of Pharmaceutical Sciences (RICiFa 2014)" was held in Cordoba, Argentina, on 18 and 19 September 2014. This meeting was organized by professors and researchers from the National University of Córdoba, Córdoba (Argentina), in collaboration with members of the National University of Rosario (Rosario, Santa Fe, Argentina).

The main objective of this meeting was to promote a space for diffusion of scientific knowledge encouraging the integration of the participants in an academic and social framework.

The activities covered all areas of Pharmaceutical Sciences: Clinical Pharmacy, Drug Quality Control, Healthcare Pharmacy, Medicinal Chemistry, Pharmaceutical Biotechnology, Pharmaceutical Education, Pharmaceutical Microbiology, Pharmaceutical Technology, Pharmacobotany, Pharmacognosy and Pharmacology.

More than 240 scientific works (mode: poster) were presented at this event and prestigious foreign scientists and leading researchers of our country spoke at this event covering all the above mentioned areas.

RICiFa2014 was sponsored by the National Council for Scientific and Technological Research (CONICET), the National University of Córdoba and the National University of Rosario. The auspices mentioned added to the economic contribution of different companies have made possible the realization of RICiFa 2014.

Together with RICiFa2014 the the 1st Workshop on Pharmaceutical Professional Services were conducted, activity organized as part of celebrations commemorating the 50th anniversary of the creation of the College of Pharmacists of Córdoba (CFC).

The Organizing Committee thanks all the participants of the event and look forward to your presence in RICiFa2016.

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PHARMACOLOGY

Jodina rhombifolia repeated oral administration in adolescent and adult rats: differential effects in ethanol consumption

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Keywords: antialcoholic, *Jodina rhombifolia*, adolescent rats, adult rats

Worldwide, alcohol (ethanol) causes about 3.3 million deaths/year (5.9% of all deaths), and 5.1% of global burden of disease is attributable to alcohol consumption. Abuse and alcohol dependence play an important role in public health due to both the clinical consequences as economical cost. Empirical data from traditional medicines manifest the use of plants for treatment of alcoholism and alcohol abuse. Leaves of *Jodina rhombifolia* (Hook. & Arn.) Reissek (SANTALACEAE) are used in Argentine folk medicine as anti-alcoholic. In present study we analyzed the effect of leaves aqueous extract (0, 125 and 250 mg/kg) on voluntary ethanol intake in adolescent [postnatal day (PD) 35-40] and adult (PD 70-75) male Wistar rats. Infusion to 10% was prepared according VIII Ed Argentine National Pharmacopoeia; plant material was separated by filtration and aqueous extract was concentrated and lyophilized to preserve it. The extract was administrated twice daily (1 ml/200 g; *p.o.*). Animals (n=6) were individually housed in standard plastic cages with wood chip bedding. Throughout the duration of experience, ethanol was offered in home-cage, two-bottle free-choice regimen between an ethanolic solution (20% in tap water, v/v) and tap water, with unlimited access for 24 h/day for 10 consecutive days. Rats used in present study had never experienced alcohol before the start of experiment. Ethanol presentation was initiated at start of day 1. Results are expressed as mean±S.E.M. of 10-days experimentation. Ethanol consumption for 0, 125 and 250 mg/kg, respectively: **adolescent rats**: 7.89±0.40, 4.43±0.89 (p<0.001) and 2.49±0.26 g/Kg (p<0.001); **adult rats**: 6.32±0.14, 2.62±0.17 (p<0.001) and 2.38±0.15 g/Kg (p<0.001). A significant decrease in ethanol consumption was observed throughout the treatment period, without significant changes in food or water intake. The results obtained in the present preliminary study show that repeated administration of extract, markedly reduces ethanol voluntary intake in adolescent and adult male Wistar rats.

Novel Gemini Vitamin D Analogue: Antitumoral Effects on Cancer Cell Lines and Lack of Calcemic Activity in Mice.

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Keywords: analogue, antitumor agents, calcitriol, cancer, cell lines

RICiFa 3era Reunión Internacional de Ciencias Farmacéuticas

1α,25-dihydroxyvitamin D_3 (calcitriol) shows potent growth-inhibitory properties on different cancer cell lines although its hypercalcemic effects have severely hampered its therapeutic application. In collaboration with the laboratory of Organic Chemistry of the University of Vigo we synthesized a novel Gemini analogue of calcitriol, called UVB1, in order to maintain or increase the antitumor effects and decrease the calcemic activity. The aim of this study was to evaluate the antitumor action of UVB1 on different tumor cell lines, comparing its effects with those elicited by calcitriol, and studying its calcemic activity and its toxicity in mice. The analog exerts a significant decrease in cell count after treatment with UVB1 in HCT116 (human colorectal cancer), U251 (human glioblastoma), HN13 and HN12 (human head and neck squamous cell carcinoma) and T47D (human breast adenocarcinoma) cell lines. Also, UVB1 reduces cell migration of T98G (human glioblastoma multiforme), HN12 and LM3 (murine mammary adenocarcinoma) cell lines, while cell motility of HC11 (normal murine mammary epithelial cell line) is not affected. Since calcitriol has been shown to generate ROS which is involved in its antiproliferative activity, ROS production was determined in HN13 cell line after treatment with UVB1. An increase in the levels of ROS was observed. Cell cycle analysis by flow cytometry on the same cell line shows that UVB1 induces arrest in the G_1/G_0 phase and this result is accompanied by a decrease in cyclin D1 levels. The novel analogue, in contrast to calcitriol, did not cause hypercalcemic effects in BALB/c and nude mice. Additionally, histological examination of livers and kidneys showed no pathological changes. Furthermore, animals did not experiment changes in behavior, weight loss or haematocrit alterations. In conclusion, these results suggest that this Gemini analogue may have therapeutic potential as an antitumor drug.

Could variations in nNOS levels drive expression of cocaine sensitization?

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Key words: cocaine, sensitization, nitric oxide, hippocampus

Behavioral sensitization is known as the increased sensitivity to locomotor stimulating effect after repeated psychostimulants administration, and it is believed to be relevant to drug addiction and craving in humans. Repeated cocaine induces behavioral sensitization and modulates synaptic plasticity in the hippocampus, an important brain region for the associative learning processes occurring during addiction. Nitric oxide (NO) is a neurotransmitter involved in several effects in the central nervous system including synaptic plasticity and complex behavioral responses. We have previously demonstrated a key role of neuronal NO synthase (**nNOS**)/**NO**/soluble guanylate cyclase (**sGC**)/cyclic guanosine monophosphate (**cGMP**) signaling pathway in the development of cocaine sensitization and in the associated enhancement of hippocampal synaptic plasticity. In the present work, we attempted to determine constitutive differences in nNOS protein levels between sensitized and non-sensitized groups by western blot, and whether nNOS inhibition after sensitization reverses the behavioral effect of cocaine and the associated hippocampal synaptic plasticity. We administered five daily cocaine injections (15 mg/kg, i.p) to 35 days old Wistar rats, followed by five daily 7-nitroindazole (nNOS inhibitor, 50 mg/kg, i.p) or