

ABSTRACTS

Satellite Meeting of the Society for Stimulus Properties of Drugs

The following are abstracts of papers presented at the Satellite Meeting of the Society for Stimulus Properties of Drugs held at the Disneyland Hotel in conjunction with the Federation of American Societies for Experimental Biology Annual Meeting, Anaheim, CA, April 13-14, 1980.

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COMPARATIVE STIMULUS PROPERTIES OF COCAINE, NORCOCAINE, AND N-ALLYLNORCOCAINE. J.A. Bedford, R.F. Borne, G.L. Nail, and M.C. Wilson, Research Institute of Pharmaceutical Sciences and Departments of Medicinal Chemistry and Pharmacology, School of Pharmacy, University of Mississippi, University, MS 38677.

A discriminative stimulus paradigm was employed to train eight male and female Wistar rats to discriminate 5 mg/kg cocaine HCl from 2.0 ml/kg saline. Subjects responded in a two bar operant chamber on an FR 30 schedule for food reinforcement. All sessions followed a 10 minute pretreatment with either saline, the training dose of cocaine, four probe doses of cocaine HCl (1.0, 2.5, 7.5, 10.0 mg/kg), four probe doses of N-allylnorcocaine (5.0, 7.5, 10.0, 20.0 mg/kg). All probe doses were tested using an extinction procedure. The three highest doses of cocaine (2.5, 7.5, 10.0 mg/kg) generalized completely with greater than 90% of the responding occurring on the cocaine lever. The 1.0 mg/kg dose of cocaine generalized to saline with only 16% of the responding occurring on the cocaine lever. The two highest doses of norcocaine (5.0 and 7.5 mg/kg) generalized to cocaine with greater than 95% of responses occurring on the cocaine lever. The 2.5 mg/kg dose of norcocaine resulted in 57% while the 1.0 mg/kg dose generalized to saline with only 4% of responding occurring on the cocaine lever. The N-allyl-norcocaine was found to generalize completely to cocaine (99%) only at the 20 mg/kg dose. The intermediate doses (7.5 and 10.0 mg/kg) resulted in 28% and 68% of responding occurring on the cocaine lever, respectively. The 5.0 mg/kg dose of N-allyl-norcocaine generalized to saline with only 6% of responding occurring on the cocaine lever. Both drugs were shown to generalize to cocaine, however much higher doses of N-allyl-norcocaine were required to produce generalization. The data indicate that the N-methyl group on the cocaine molecule is not responsible for its stimulus properties. (Supported by the Research Institute of Pharmaceutical Sciences and NIDA Grant No. DA-00810.)

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DISCRIMINATIVE STIMULUS PROPERTIES OF COCAINE AND TWO EXTRACTS OF THE COCA LEAF (E. COCA). J.A. Bedford, M.A. ElSohly, G.L. Nail, C.E. Turner, and M.C. Wilson, Research Institute of Pharmaceutical Sciences and Department of Pharmacology, School of Pharmacy, University of Mississippi, University, MS 38677.

Male and female Wistar rats were trained to discriminate 5.0 mg/kg cocaine from 2.0 ml/kg saline using a two-bar food reinforcement (FR 30) discriminative stimulus paradigm. The extracts were prepared by exhaustively extracting powdered coca leaves with 95% ethanol and then partitioning the residue between chloroform and water. Two doses of the water extract (480, 960 mg/kg) were tested along with four doses of the chloroform extract (7.5, 15, 30, 60 mg/kg). The water extract was devoid of cocaine while the four doses of the chloroform extract contained 0.4, 0.83, 1.65, and 3.3 mg/kg of cocaine respectively. Cocaine doses of 2.5, 7.5, and 10.0 mg/kg generalized to cocaine with greater than 90% of the responding occurring on the cocaine lever. The 1.0 mg/kg dose of cocaine generalized to saline. The water extract at 480 mg/kg generalized to saline, however following pretreatment with the 960 mg/kg dose of the extract the animals failed to respond. Finally, with the four doses of the chloroform extract only the largest dose (60 mg/kg) generalized to cocaine while the other three doses did not. The 7.5 mg/kg dose generalized to saline, while the 15 and 30 mg/kg doses engendered intermediate levels of responding on both levers. In conclusion, the activity exhibited by the chloroform extract can be accounted for by its cocaine content, however the activity exhibited by the water extract cannot be attributed to the trace amount of cocaine contained in this extract. (Supported by the Research Institute of Pharmaceutical Sciences and by NIDA Contract No. 271-78-3526. The authors would like to express our sincere appreciation and thanks to U.S. Department of Justice, the U.S. State Department; and Señor Ing. J. Alejandro Costa, Administrator General, Empresa Nacional de la Casa, Lima, Peru.)