

TIME COURSE DURING GROWTH OF THE ACTIVITY OF A FACTOR IN SERUM PROMOTING CHICKEN MYOBLAST MULTIPLICATION. Kazuhiro Kohama Department of Pharmacology, Faculty of Medicine, University of Tokyo. Eihiro Ozawa Department of Pharmacology, Faculty of Medicine, Tokyo Medical and Dental University. Bunkyo-ku, Tokyo, JAPAN.

Chicken embryo contains a factor(s) to promote chicken myoblast multiplication. To investigate this substance, an assay system was established as follows. Myoblasts were cultured in the presence of different amounts of the factor. After fixation and staining, the number of nuclei of myogenic cells was counted under a microscope. It was found that if plotted against the concentration of the factor, the number of nuclei increased linearly up to a certain level. Consequently, the activity of the factor can be assayed by the slope ratio assay method. The activities of the factor in various tissues of 11th day embryo were determined. The whole embryo was the highest in its activity, and the serum was the next. Extracts of the spinal cord and skeletal muscle showed low activities. These findings do not favor the idea that this factor is released from the nerve cells. Time course of the activity in serum during embryonic development and posthatching life was studied. The activity of the serum derived from 11th day embryo was fairly high. It decreased on the 16th day and increased again, reaching a maximum around the day of hatching, and then decreased again to stay on a plateau until 3 weeks of age. In the case of roosters, the activity increased again at the adolescent stage. There was a significant difference in the activity between hens and roosters. Increase of this factor in serum coincided with the growth of muscle cells.

STATE-DEPENDENT LEARNING (DISSOCIATION OF LEARNING). III. STATE-DEPENDENT LEARNING WITH HALLUCINOGENS IN RATS. Katsushi Yamada, Nobuya Ogawa and Showa Ueki. Department of Pharmacology, Faculty of Pharmaceutical Sciences, Kyushu University, Fukuoka, JAPAN.

The term "state-dependent learning" refers to the lack of transfer of a trained response between two physiological states. We previously reported that Δ^9 -tetrahydrocannabinol (THC) and mescaline produced state dependent learning, while LSD-25 and methamphetamine did not in passive and active avoidance in rats (Jap.J.Pharmacol., vol.23, suppl. 101, 1973). The objective of the present study was to investigate whether or not these drugs have a similar dissociative action upon habituation to open-field behavior. Open-field behavior of male Wistar King A rats was observed for a 3 min session each day for 16 days. D-S group was injected (i.p.) with one of hallucinogens during the first 14 sessions and saline during the last 2 sessions, while the drug sequence was reversed for S-D group and S-S group was given saline only throughout 16 sessions. In D-S groups, THC (5 mg/kg) slightly decreased ambulation and rearing, and in addition, produced walking backwards, while mescaline (25 mg/kg), LSD-25 (100 μ g/kg) and methamphetamine (2 mg/kg) markedly increased ambulation and rearing as compared with those of S-S group during 14 sessions. The intersession habituation was rather gradual regarding ambulation in 5 experimental groups. Furthermore the 4 D-S groups, subjected to state change in session 15 and 16, showed a decrease in ambulation as compared with those with no state change, while saline-THC group showed a slight decrease in ambulation and the other S-D groups showed an increase. These results suggest that these drugs produced state-dependent behavior in the sense that dissociation or state dependency is defined as variation in habituated responses due to state change.