- B03 INTRODUCTION OF NEW INDICES INTO CONTINUOUS AVOIDANCE TEST:
Tetsu ONO¹⁾ and Osamu WADA²⁾ (1: Tachikawa College of Tokyo, 3-6-33,
Azumacho, Akishima, Tokyo 196, Japan. 2: Department of Hygiene and
preventive Medicine, Faculty of Medicine, University of Tokyo, 7-3-1,
Hongo, Bunkyo-ku, Tokyo 113, Japan).

A personal computer system was introduced in conditioned lever-press avoidance experiment in Sidman situation. Experimental data were analyzed with both classic indices such as response rate and shock rate and with following new indices introduced in this experiment. New indices include sum of squares of shock-shock intervals, means of shock-response time and numbers of shock-response time less than 5 sec and more than 100 sec. To determine whether various treatments have effects on the indices, diazepam, alcohol, caffeine, sodium chloride, mannitol and lithium-deficient diet were given to mice which had been trained by Sidman's situation previously. By the new indices, effect of administration with sodium chloride on the avoidance behavior could be detected whereas classic indices could not detect the effect. Effect of administration on the lever-press response with alcohol, caffeine, mannitol and lithium-deficient diet could be detected by both the classic and new indices. According to the treatment with these substances, however, mode of effect on the indices differed from each other. This evidence has suggested that indices shown above may be applicable to characterize the effects by various treatments on the lever-press behavior.

- B04 GENETIC VARIATION ON CLIOQUINOL TOXICITY IN WISTAR RAT:
Shinichiro HORI¹, Sachiko OHTANI¹, Hitoshi TANABE² and Hajime KOTAKI³ (1Dept.
Neurochem., Tokyo Metropol. Inst. for Neurosci., 2-6 Musashidai, Fuchu-city, Tokyo 183,
²Tokyo Metropol. Neurolog. Hospital, 2-6-1 Musashidai, Fuchu-city, Tokyo 183, ³Hospital
Pharmacy, Fac. of Med., Univ. of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113)

Clioquinol (5-chloro-7-iodo-8-hydroxyquinoline, chionoform) develops gait disturbance and paralysis of extremities on Wistar rats which have administered its high dose (100-200mg/Kg of body weight) for long duration (once a day for 20days after birth). However, the degree of the neural disturbance is extremely variable. During the intoxication study, in vivo, we found that the individual variation to clioquinol toxicity is generated by the genetic factor(s). In this paper, we tried to separate rats of Wistar strain into the resistant and sensitive substrains to clioquinol toxicity. LD₅₀'s of new born rat (1day old) to clioquinol by a single subcutaneous injection and by daily subcutaneous injections, once a day for 20days after 1day old, was 340mg/kg body weight and 250mg/kg body weight, respectively. At the beginning of this experiment, we selected rats into resistant, intermediate and sensitive by daily subcutaneous injections of 150mg clioquinol per kg body weight once a day for 20days. Later, we found that rats can be selected to resistant, intermediate and sensitive by increasing rate of body weight after a single subcutaneous injection of 300mg clioquinol per kg body weight. Resistant rat survived and increased its body weight in the range between 85-100% of control rat. Intermediate rat survived but was restrained increasing of its body weight less than 85% of control rat. Sensitive rat died during 7days after injection. Till now, we followed up to the 10th-11th generation from the wild parents, and obtained the resistant and sensitive strains. Appeared percentages of the resistant, intermediate and sensitive kids from the resistant parents were 73%, 20% and 7%, respectively, and those from the sensitive parents were 0%, 9% and 91%, respectively. Thus, each strain still contained impurity, but data indicates that the resistant and sensitive strains can be isolated.