

Thesis Title        EFFECTS OF PRENATAL AND ADULT CAPSAICIN TREATMENT  
                         ON NOCICEPTIVE THRESHOLDS AND NEUROGENIC PLASMA  
                         EXTRAVASATION

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### ABSTRACT

Capsaicin (8-methyl-N-vanillyl-6-nonenamide), a pungent substance of chilli pepper, *Capsicum minimum*, was administered subcutaneously to the pregnant rats of Wistar strain, on day 5 or day 15 of gestations, with a single dose of 10, 20 or 50 mg/kg or multiple doses of 10 mg/kg for 5 consecutive days. Three weanling pups of both sexes (21 days of age) from each litters were randomly selected, and subjected to determination of thermal pain thresholds, tested by the hot plate (55°C) and tail immersion (50°C), and the mechanical pain thresholds. In prenatally capsaicin treated rats both thermal and mechanical pain thresholds were not significantly different from those in controls. Inflammatory response (neurogenic plasma extravasation) induced by xylene was found to be suppressed only in the offspring of the pregnant rats treated with high dose of capsaicin (50 mg/kg s.c.) in either single or multiple injection

on day 15 of gestation. Degeneration of both large (A-type) and small (B-type) dorsal root ganglion cells were also found in these same groups of animals.

In adult capsaicin treated rats (20 mg/kg s.c.), the hot plate and paw pressure pain thresholds were significantly elevated at 0.5 hr after capsaicin injection and return to normal level within 1-5 days. Neurogenic plasma extravasation in the adult capsaicin treated rats was only 60% of that of controls, 1-2 hr. after injection of capsaicin. Morphological change was also detected within 1-2 hr after treatment in both large (A-type) and small (B-type) dorsal root ganglion cells of adult capsaicin treated rats. The recovery of nociception in adult capsaicin treated rats might be resulted from compensation by the remaining intact ganglion cells. This compensation probably occurred in prenatally capsaicin treated rats.