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Brief Note
The Distribution of DNP Groups in the Draining Lymph Nodes of C3H and Athymic Nude Mice Following Skin Painting with DNCB

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Key words : contact sensitivity — draining lymph node — DNCB — antigen distribution — athymic nude mouse

In our previous studies[1,2] we were able to show by immunofluorescence that 2,4-dinitrophenyl groups were distributed on cells (DNP cells) in the peripheral lymphoid system of guinea pigs when 2,4-dinitrochlorobenzene (DNCB) was painted on to the skin. The majority of DNP cells were found in the peripheral blood, spleen and thoracic duct at 1-6 hours after painting, but maximum number was reached in lymph nodes draining the site of DNCB application at 12 hours post-painting. We were able to show that BALB/c strain athymic nude mice had clearly more DNP cells in the draining lymph nodes than thymic mice when DNCB introduced percutaneously.[3] The peak frequency of DNP cells was at 12 hours following the exposue to DNCB in thymic mice, whereas it was reached at 24 hours post-painting in athymic nude mice. The object of the experiment reported here is to reaffirm these findings using C3H strain thymic and athymic nude mice.

Animals used were C3H strain thymic (nu/+) and athymic nude mice (nu/nu) aged 6 weeks. An application of 0.05 ml of 5% DNCB-ethanol solution was given to the both sides of inguinal skin. One side of inguinal lymph node was obtained at 12 hours and another side of lymph node was taken at 24 hours after painting with DNCB. Smear sections of lymph node cells were prepared and DNP cells were detected by immunofluorescent method using fluorescein isothiocyanate labelled antibody to DNP groups as described previously.[1] The percentage of the stained cells was determined by examination of the microscopic field in fluorescent light and conventional light alternately. Table shows the means and their standard errors (95% confidence level) of frequencies of DNP cells in draining lymph node cells of nu/+ and nu/nu mice which were obtained 12 and 24 hours after painting with DNCB. The incidences of DNP cells in nu/nu mice was higher than those in nu/+ mice either at 12 hours or at 24 hours post-painting. The incidences in four of five nu/nu mice increase at 24 hours post painting, but they have a tendency to be reduced in nu/+ mice as shown in Figure. Our current results using C3H strain mice is roughly identical to those in previous experiment using BALB/c strain mice.[3] These findings indicate that the draining lymph node cells of thymic mice liberate the specific DNP factors as guinea pigs, but those of athymic do not. It is reasonable to assume that T lymphocytes in the lymph node draining site of DNCB painting play some role to release the factors.

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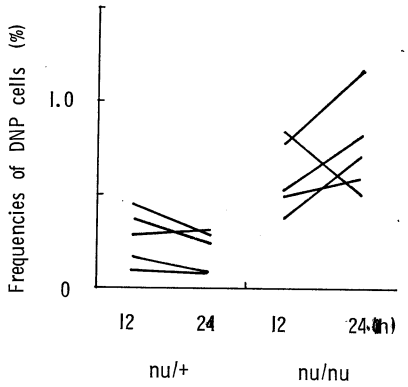

Fg. 1. The incidences of DNP cells in draining lymph node cells of C3H thymic (nu/+) and athymic (nu/nu) mice obtained 12 and 24 hours after skin painting with DNCB.

The incidences of DNP cells in draining lymph node cells of C3H thymic (nu/+) and athymic (nu/nu) mice obtained 12 and 24 hours after skin painting with DNCB

Hours after skin painting with DNCB	Mean frequencies and standard errors	
	nu/+	nu/nu
12	0.27±0.15 (%)	0.61±0.20
24	0.21±0.11	0.75±0.26

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