

P-82

ASSESSMENT OF LOCAL LYMPH NODE ASSAY AS AN ALTERNATIVE METHOD FOR SKIN SENSITIZATION POTENTIAL

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Preclinical test methods for allergenic potential chemicals has been widely used to assess human risks and has been developed. Recently, the murine local lymph node assay (LLNA) has been proposed as a prospective method to identify contact allergens and to replace conventional the guinea pig maximization test (GPMT). The objective of this study was to establish LLNA and to evaluate allergenicity of chemicals by LLNA. To establish the LLNA, contact allergen dinitrochlorobenzene (DNCB), respiratory allergen toluene diisocyanate (TDI) and moderate allergen α -hexylcinnamaldehyde (HCA) were used as positive chemicals and the irritant sodium lauryl sulfate(SLS) also used as reference chemical. BALB/c mice were treated by topical application on both ears for 3 consecutive days with various concentration of chemicals. Seventy-two hours following the final application, the lymphocyte proliferative response to chemicals was measured with lymph node cells. In results, the weights of lymph node compared with vehicle-treated controls were significantly increased at all the concentration of DNCB, TDI and more than the concentration of 20% HCA. In the case of [3 H]-thymidine uptake in lymph node cells, DNCB, TDI and more than the concentration of 20% HCA also elicited 3-fold or greater increase in that response. But irritant SLS showed the increase in lymph node weight and 7 folder increase in [3 H]-thymidine uptake responses at the only highest concentration. This results shows that LLNA could be established and may be alternative method to screen the allergenic potential chemicals.