

Effects of Strain Differences and Vehicles on Results of Local Lymph Node Assays

Takayuki ANZAI¹3), Ludwig G. ULLMANN³, Daisuke HAYASHI¹), Tetsuo SATOH²), Takeshi KUMAZAWA¹) and Keizo SATO¹)

1) Showa University School of Medicine 2) HAB Research Institute, Ichikawa General Hospital 3) Harlan Laboratories Ltd.

Abstract :

The Local Lymph Node Assay (LLNA) is now regarded as the worldwide standard. The analysis of accumulated LLNA data reveals that the animal strains and vehicles employed are likely to affect LLNA results. Here we show that an obvious strain difference in the local lymph node response was observed between DMSO-treated CBA/CaOlaHsd and CBA/CaHsdRcc mice. We also show that a vehicle difference in the response was observed when CBA/CaHsdRcc mice were exposed to 6 vehicles; 4:1 v/v acetone/olive oil (AOO), ethanol/water (70% EtOH), N,N-dimethylformamide (DMF), 2-butanone (BN), propylene glycol (PG), and dimethylsulfoxide (DMSO). The dpm/LN level was lowest in the 70% EtOH group and highest in the DMSO group. When alpha-hexylcinnamaldehyde (HCA) was used as a sensitizer for the LLNA, HCA was a weak sensitizer when AOO or DMSO was used as a vehicle, but a moderate sensitizer when the other 4 vehicles were used. This study showed that there are vehicle differences in the local lymph node response (dpm/LN level) in the LLNA and that the sensitization potency of HCA may be classified in different categories when using different vehicles. This suggests that careful consideration should be exercised in selecting a vehicle for the LLNA. A further comprehensive study will be needed to investigate why vehicle differences are observed in the LLNA.

Key Word :

animal strain, local lymph node assay, vehicle-effect

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