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CONTACT HYPERSENSITIVITY REACTION TO OXAZOLONE IS INDEPENDENT WHEREAS CONTACT HYPERSENSITIVITY REACTION TO DNCB IS DEPENDENT ON IL-4

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Oxazolone and DNCB are two of the most often used chemicals to induce experimental contact hypersensitivity reactions. Oxazolone is known as a less potent allergen than DNCB and seems to induce both a T-cell and immunoglobulin response whereas DNCB only induces a T-cell response. Conflicting results on the role of Il-4 in CHS reactions elicited by these chemicals have been obtained supporting either a porinflammatory or rather inhibitory role of this cytokine. To evaluate the role of Interleukin-4 (Il-4) in CHS we investigated the reaction to locally applicated Oxazolone or DNCB. Il-4 deficient and BALB/c control mice were sensitized with 1% Oxazolone or 5% DNCB on the unshaved abdomen. Five days later mice were challenged with the same allergen on the right ear and ear swelling was measured the following 5 days with a micrometer. Concerning the CHS to DNCB, the knockout mice showed a 40-60 % reduction of ear swelling 24 hours after challenge ($p \leq 0{,}01$) and a reduced duration of CHS ($p \leq 0{,}001$) compared to wildtype mice. This attenuation was accompanied by a marked reduction of cellular infiltrates in the dermis. In order to exclude influences of the genetic background on the diminished CHS response, experiments were performed using heterozygoues Il-4 (+/-) BALB/c mice. Here no difference in the CHS response to DNCB when compared to wildtype mice could be observed. In contrast, the magnitude and duration of CHS to Oxazolone was similar both in the Il-4 deficient mice and in the Balb/c control mice indicating that the CHS to Oxazolone is independent of Il-4. Our results therefore indicate that the hypersensitivity response to DNCB and oxazolone may partly evoke a different pathway being dependent and independent of Il-4.