

Effect of psychological stress and neuropeptides on cutaneous permeability barrier function

^{1,2} Kazumoto Katagiri, ¹ Yutaka Hatano, ¹ Rieko Kurahashi

¹ Department of Dermatology, Faculty of Medicine, Oita University

² Department of Dermatology, Dokkyo Medical University Koshigaya Hospital

Chronic stress inhibits the recovery of permeability barrier function via induction of glucocorticoids as an end-product of hypothalamic - Pituitary - Adrenal axis. In this study, we examined an effect of acute stress on the barrier function in mice. Acute stress, which was induced by transfer of mice to a new cage and keeping them with a crowded condition for 12 hours, inhibited the recovery of barrier function after acute disruption by tape stripping. Chemical denervation by capsaicin abolished the inhibitory effect of the stress. Intradermal administration of substance P, which is a candidate of stress mediator in this system, inhibited the barrier recovery. These results suggest that acute stress inhibits the barrier recovery as well as chronic stress via activation of peripheral nerve.