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**SAFETY EVALUATION OF SUNSCREENS (I) ;  
CORRELATION BETWEEN SUN PROTECTION FACTOR  
AND SKIN IRRITATION**

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**Abstract** In recent years, the safety of sunscreens has been challenged based on the reports of its adverse effect on users ; dermatitis, allergic contact dermatitis, photoallergic contact dermatitis. To investigate a correlation between sun protection factor (SPF) and the safety of sunscreens, we measured in vitro SPF index using homosalate as a standard and examined the toxicity tests on cosmetics ; primary and cumulative skin irritation tests, ocular irritation test, and skin sensitization test. Among sunscreen ingredients, homosalate(HO), octyl methoxycinnamate (OMC), octyl salicylate(OS) as UVB filter and butyl methoxy dibenzoil methane (BMDM) as UVA filter were selected. The results showed that skin irritation indexes were increased as SPF indexes were increased. There was a good correlation between SPF and skin irritation, but not skin sensitization. These results suggest that in vitro SPF index might be used to predict the safety of sunscreen ingredients. However, further studies are needed to make the safety assessment considering the characteristics of sunscreens.

keyword : sunscreens, SPF index, cosmetic safety, skin irritation, octyl methoxycinnamate