Thesis Title The Development of Sunscreen Creams and The Sun Protection Factor Evaluation in Thai Volunteers.

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ABSTRACT

Topical sunscreen creams containing micronized titanium dioxide were developed and evaluated for sun protection factor (SPF). Various physicochemical and cosmeticological properties which may affect the prepared titanium dioxide sunscreen formulations were evaluated. The study was performed with 20 Thai volunteers to evaluate the in vivo SPF. The effect of varying the amount of micronized titanium dioxide on the SPF of the prepared sunscreen creams compared to the US FDA standard sunscreen formulation was also measured. The general rank order for the SPF for all the micronized titanium dioxide formulations evaluated was: 15% highest formulation > 10% formulation > 8% formulation > 4% formulation > 2% lowest formulation. Moreover, the obtained data indicated that there was correlation between in vitro and in vivo results.

Further to the results carried out on the cream base formulations in the first part, the efficacy of 2 different physical sunscreens: non-micronized titanium dioxide and micronized titanium dioxide were evaluated with respect

to SPF value. Results showed that the different types of titanium dioxide led to different perceived cosmeticological performance.