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### CORRELATION BETWEEN SKIN IRRITATION AND CYTOTOXICITY OF ANTI-WRINKLE AGENTS

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To compare skin irritation and cytotoxicity of anti-wrinkle agents, we examined skin irritation of six anti-wrinkle agents (ascorbic acid, glycolic acid, all *trans*-retinoic acid, ginseng extract, retinol, EB) in New Zeland white rabbit. Cytotoxicity of these agents was determined by MTT [tetrazolium salt 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide] at multi-time points in cultured HaCaT cell, a human immortalized keratinocyte cell. We then analyzed correlation between skin irritation and cytotoxicity by spearman's rank correlation analysis. All *trans*-retinoic acid showed the highest primary irritation index (0.92) in skin irritation test. Being all the six agents not irritant, retinol showed the most cytotoxic agents. The correlation between skin irritation and cytotoxicity ( $IC_{50}$ ) at different time point was 0.814, 0.757, 0.814 and 0.7 at 3, 24, 48 and 72 h. We also found that  $IC_{20}$  and  $IC_{80}$  of these agents showed similar correlation with skin irritation. These results therefore demonstrated that there is close correlation between skin irritation and cytotoxicity  $IC_{50}$  value by MTT in HaCaT cell at early time points by anti-wrinkle agents or  $IC_{20}$  value.  $IC_{50}$  at early time point or  $IC_{20}$  values may be reliable alternative determinant of skin irritation.