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# Photoallergy Testing

2. Hill Top Chamber

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**0 = no evidence of any effect**
**? = query**
**+/- = minimal, faint, uniform or spotty erythema**
**1 = pink uniform erythema covering most or all of the site**
**2 = pink-red erythema visibly uniform in entire site**
**3 = bright red erythema with or without petechiae or papules**
**4 = deep red erythema with or without vesiculation or weeping**

3 Scoring

Subjects:
Panels of 25 subjects, fair skinned, male and female, randomly selected. Subjects with abnormal response to sunlight are excluded.

**Test Materials**
Approximately 250gm of test material is required for a panel of 25 persons.

NOTE: it is strongly advised that the product be tested for contact sensitization prior to any photobiological evaluations.

**Light Source**
150 Watt Xenon Arc Simulator. Long ultraviolet light (UV-A, 315-400 nm) is obtained.

**Method**
Prior to the testing of sunscreen product(s), the sensitivity of the unprotected skin of each subject is determined by exposing areas of untreated skin to the solar simulator for increasing periods. The MED of each individual is determined in seconds, based on the length of exposure which first elicits a slight reddening of the skin, as observed 24 hours following exposure. Duplicate test areas to which the test substance has been evenly applied (at a density of 10 ul or mg/sq.cm.), are delineated on the subjects back. Sites are covered with patches of non-woven cotton cloth and occluded using overlapping strips of hypoallergenic tape. Alternatively, Hill Top Chambers may be utilised. After 24 hours the one set is exposed to 3 MED's of solar simulating radiation

while the remaining set is left unirradiated. After a 48 hour rest period during which the site is left uncovered a similar occlusive application is made for another 24 hours to the same sites and again one set is exposed to 3 MED's. This sequence is repeated for a total of 6 exposures twice weekly.

**Challenge**: panelists are challenged 10-14 days after the final induction exposure. The sites are then irradiated with 4.0 joules/cm2 of UV-A radiation. Reactions are scored 48 and then 72 hours post challenge irradiation.

**References**
Contact Dermatitis 1980:6:161-160
"Photomaximization test for identifying photoallergic contact sensitizers",
Kaidbey,K.H., Kligman,A.M.

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