



## SUMMARY

### **EVALUATION OF THE SUN PROTECTION FACTOR ACCORDING TO THE INTERNATIONAL SUN PROTECTION (SPF) TEST METHOD and its “LONG LASTING” EFFECT after 8 hours combine with “PROPERTIES WATER RESISTANCE”**

SIEGE SOCIAL - LYON  
27, bd du 11 Novembre 1918  
B.P. 2132  
69603 VILLEURBANNE Cedex  
FRANCE

Tél. : 33 (0)4 72 82 36 56  
Fax: 33 (0)4 78 89 60 48

### **DAYLONG EXTREME - Lotion solaire aux liposomes**

**Study N°: #08E4132**  
**Estimate: #08D4132**  
**Sponsor: SPIRIG**

#### **Study Objectives**

- To evaluate the Sun Protection Factor (SPF) of a product, according to the International SPF Test Method published by COLIPA / CTFA SA / JCIA (May 2006),
- To evaluate the water resistance of the sun protection of this product 8 hours after application.

#### **Method**

The matter is to compare the Sun Protection Factor of the product applied at 2 mg/cm<sup>2</sup> obtained after 2 immersions (at t3h and t6h after application) of 20 minutes in a bath of water at 29 ± 2°C, to that obtained without immersion.

The Sun Protection Factor is the ratio of the Minimal Erythema Dose obtained in presence of the product (MEDp) to the Minimal Erythema Dose obtained without the product (MEDu).

$$\text{SPF} = \text{MEDp}/\text{MEDu}$$

The Minimal Erythema Dose is defined as the quantity of energy necessary to produce the first perceptible unambiguous redness reaction with clearly defined borders, evaluated 16 to 24 hours after exposure to a solar simulator, with 6 increasing doses of UV (12% progression).

The study must be carried out on at least 10, and not more than 20 subjects and must satisfy the statistical criterion (95% CI < 17% Average SPF).

#### **Investigators**

Hervé BURNET  
Trial Manager

Aurélié BONNOT  
Trial Manager Assistant

**Results****DAYLONG EXTREME - Lotion solaire aux liposomes****WITHOUT IMMERSION**

Subject / Volontaire	ITA°	Phototype	MEDnp / DEMnp	MEDp / DEMp	SPFi / FPSi
(1)*	(36)*	(III)*	(1.086)*	(122.105)*	(112,4)*
(2)*	(41)*	(III)*	(0.976)*	(110.301)*	(113.0)*
3	64	I	0.549	55.073	100.4
4	35	III	0.871	78.047	89.6
5	41	III	0.913	91.642	100.4
6	37	III	1.064	119.587	112.4
7	51	II	0.762	85.599	112.4
<b>Number of subjects / Nombre de sujets</b>				<b>n =</b>	<b>5</b>
<b>Average SPF / FPS moyen</b>					<b>103.0</b>
<b>Standard deviation / Ecart-type</b>					<b>9.6</b>

**WITH IMMERSION**

Subject / Volontaire	ITA°	Phototype	MEDnpw / DEMnpw	MEDpw / DEMp	SPFiw / FPSiw	% Water Resistance Retention %WRR / %RE
(1)*	(36)*	(III)*	(1.086)*	*	*	*
(2)*	(41)*	(III)*	(0.976)*	*	*	*
3	64	I	0.549	29.299	53.4	52.7
4	35	III	0.871	45.891	52.7	58.3
5	41	III	0.913	48.112	52.7	52.0
6	37	III	1.064	58.520	55.0	48.5
7	51	II	0.762	35.034	46.0	40.4
<b>Number of subjects / Nombre de sujets</b>				<b>n =</b>	<b>5</b>	<b>5</b>
<b>Average SPF / FPS moyen</b>					<b>52.0</b>	<b>50.4</b>
<b>Standard deviation / Ecart-type</b>					<b>3.5</b>	<b>6.6</b>

\*Data for the subject #1 and #2 were not included in final results because the exposure series failed to illicit an erythral response on any sub-site for the water-resistance tested product.

**Reference P3**

Subject / Volontaire	ITA°	Phototype	MEDnp / DEMnp	MEDp / DEMp	SPFi / FPSi Standard P3
(1)*	(36)*	(III)*	(1.086)*	(17.382)*	(16,0)*
(2)*	(41)*	(III)*	(0.974)*	(15.590)*	(16.0)*
3	64	I	0.549	8.781	16.0
4	35	III	0.871	13.937	16.0
5	41	III	0.913	14.611	16.0
6	37	III	1.064	17.024	16.0
7	51	II	0.762	17.120	22.5
<b>Nombre de sujets / Number of subjects</b>				<b>n =</b>	<b>5</b>
<b>FPS moyen / Average SPF</b>					<b>17.3</b>
<b>Ecart-type / Standard deviation</b>					<b>2.9</b>

**Conclusion**

Product, «**DAYLONG EXTREME - Lotion solaire aux liposomes**», has:  
 \_an average SPF of **103.0**,  
 \_an average SPF of **52.0**, after immersion and 8 hours after application.

Lyon, April 04, 2008.

**Fanny MARMUL**  
Research Technician

**Hervé BURNET**  
Trial Manager