



報告編號：MZ2-250400412



# 台美檢驗科技股份有限公司

## 檢驗中心 測試報告

### 委託單位

植肌生技股份有限公司

台中市南區忠明南路787號7樓

第 1 頁 / 共 2 頁

檢體名稱：超輕透舒敏保濕防曬乳

製造公司：-

製造日期：-

批號：-

檢體狀態：室溫

送檢方式：顧客送驗

聯絡人：產品開發部

聯絡電話：(04)2265-9111#360

有效期限：-

原產地：-

檢體包裝：如附件照片

檢體數量：2 件

報告用途：自主管理

----- 以上檢體資訊係由委託單位提供且確認 -----

收檢日期：2025/04/11

檢驗日期：2025/04/17

報告日期：2025/04/22

| 檢驗項目              | 檢驗結果 | 單位 | 檢驗方法  | 定量/偵測極限 |
|-------------------|------|----|-------|---------|
| SPF / Star Rating | 詳如附件 | -  | 詳如附件。 | -       |

----- 以下空白 -----

### 備註：

- 本檢驗報告之所有檢驗內容，均依委託事項執行檢驗，如有不實，願意承擔完全責任。
- 本次檢驗如未涉及抽樣時，測試報告僅對該送驗檢體負責。將報告分離使用及/或摘要複製無效，報告中所載資料僅供參考，不宜做為廣告、商業推廣及公證用。當檢驗結果低於定量/偵測極限，以"未檢出"或"陰性"表示。



測試報告僅就委託者之委託事項提供  
檢驗結果，不對產品合法性做判斷



蔡岳廷

報告簽署人：蔡岳廷 博士



報告編號：MZ2-250400412

# 台美檢驗科技股份有限公司

## 檢驗中心 測試報告



### 委託單位

植肌生技股份有限公司

台中市南區忠明南路787號7樓

第 2 頁 / 共 2 頁

檢體名稱：超輕透舒敏保濕防曬乳

檢體狀態：室溫

收檢日期：2025/04/11

檢驗日期：2025/04/17

報告日期：2025/04/22

MZ2-250400412



MZ2-250400412



蔡岳廷

報告簽署人：蔡岳廷 博士

## 附 件

檢體編號：MZ2-250400412  
 檢驗日期：2025/04/17  
 檢測項目：SPF / UVAPF / Star Rating

### 1. 檢驗結果：

| 檢體編號             | SPF   | UVA / UVB<br>ratio | UVAPF  | Star Rating | Critical<br>Wavelength<br>(nm) |
|------------------|-------|--------------------|--------|-------------|--------------------------------|
| MZ2-250400412    | 54.22 | 1.20               | 125.13 | ****        | 385                            |
| MZ2-250400412-D1 | 53.83 | 1.20               | 121.27 | ****        | 385                            |
| MZ2-250400412-D2 | 54.27 | 1.19               | 123.94 | ****        | 385                            |
| 平均               | 54.11 | 1.20               | 123.45 | ****        | 385                            |

### 2. 方法概要：

防曬係數 SPF (Sun Protection Factor) 、UVAPF 以及 Star Rating 分別為 UVB 及 UVA 防護效能標示，本試驗係利用 UVA (320 ~ 400 nm) 及 UVB (290 ~ 320 nm) 照射塗佈檢體的 PMMA substrate，經由積分球收集穿透後的光，檢驗檢體在 290 ~ 400 nm 區間每隔 1 nm 之穿透率，進而以 UV-2600 之 SPF Calculator 軟體換算求得 SPF 數值、UVA / UVB ratio、UVAPF、Star rating 及 Critical Wavelength 計算。

### 3. 設備：

- 3.1 分光光度計：Shimadzu UV 2600 (50 W halogen lamp / deuterium lamp)。
- 3.2 積分球：Shimadzu ISR-2600。
- 3.3 PMMA 板：50x50 mm。
- 3.4 精密天平：精確度可達 0.1 mg 者。
- 3.5 刷材。

## 附 件

檢體編號：MZ2-250400412  
 檢驗日期：2025/04/17  
 檢測項目：SPF / UVAPF / Star Rating

### 4. 試藥：

95%酒精：工業級，95%以上。

### 5. 步驟：

#### 5.1 前處理：

以拭鏡紙將 PMMA 板經酒精擦拭後，以藥杓沾取檢體，添加檢體於 PMMA 板，再以刷材均勻塗抹於粗糙面達  $50 \text{ mg} \pm 5 \text{ mg}$  ( $2 \text{ mg/cm}^2$ )，照光以確認塗抹均勻並置於室溫至少 15 分鐘。

#### 5.2 上機分析：

暖機 20 分鐘，將 PMMA 板放在積分球中（塗料面朝內），移動 PMMA 板使待測部位對準積分球光徑處，蓋上遮光蓋，以波長 290 ~ 400 nm 進行檢測。再次移動 PMMA 板，使另一待測部位對準積分球光徑處，重複檢測步驟。所有試驗均執行三重複，並以 UV-2600 之 SPF Calculator 軟體換算求得 SPF 數值、UVA / UVB ratio、UVAPF 及 Star rating 及 Critical Wavelength 計算，最終以平均值出具。

### 6. 計算公式：

#### 6.1 SPF 計算：

$$\text{MPF} = 1/T_{\lambda}$$

$$\text{SPF} = \frac{\sum_{290}^{400} E_{\lambda} B_{\lambda}}{\sum_{290}^{400} E_{\lambda} B_{\lambda} / \text{MPF}_{\lambda}}$$

$E_{\lambda}$  : Erythema effectiveness

$B_{\lambda}$  : Spectral irradiance of terrestrial sunlight under controlled conditions

$T_{\lambda}$  : Transmittance at wavelength

## 附 件

檢體編號：MZ2-250400412  
 檢驗日期：2025/04/17  
 檢測項目：SPF / UVAPF / Star Rating

### 6.2 UVA/UVB Ratio 計算：

$$\text{UVA/UVB} = \frac{\int_{320}^{400} \log_{10} \text{MPF}_{\lambda} d_{\lambda} / \int_{320}^{400} d_{\lambda}}{\int_{290}^{320} \log_{10} \text{MPF}_{\lambda} d_{\lambda} / \int_{290}^{320} d_{\lambda}}$$

### 6.3 UVAPF 計算：

$$\text{UVAPF}_0 = \frac{\int_{320}^{400} P(\lambda) \times I(\lambda) \times d\lambda}{\int_{320}^{400} P(\lambda) \times I(\lambda) \times 10^{-A_0(\lambda)C} \times d\lambda}$$

$P(\lambda)$  : the PPD action spectrum (see Annex)

$I(\lambda)$  : the spectral irradiance received from the UVA source (UVA 320 nm to 400 nm for PPD testing)(see Annex)

$A_0(\lambda)$  : the mean monochromatic absorbance of the test product layer before UV exposure

$C$  : the coefficient of adjustment, previously determined in Equation SPF

$d\lambda$  is the wavelength step (1 nm)

Ref: ISO 24443:2021 Cosmetics — Determination of sunscreen UVA photoprotection in vitro.

### 6.4 Star Rating：

| Mean UVA/UVB Ratio<br>≤ 2 nm increment | Star Rating Category |
|--|----------------------|
| 0.0 ~ 0.19                             | -                    |
| 0.2 ~ 0.39                             | *                    |
| 0.4 ~ 0.59                             | **                   |
| 0.6 ~ 0.79                             | ***                  |
| ≥ 0.8                                  | ****                 |

## 附 件

檢體編號：MZ2-250400412

檢驗日期：2025/04/17

檢測項目：SPF / UVAPF / Star Rating

6.5 Critical Wavelength (nm) ( $\lambda_c$ ) 計算：

$$\int_{290}^{\lambda_c} A_{\lambda} \cdot d\lambda = 0.9 \int_{290}^{400} A_{\lambda} \cdot d\lambda$$

$A_{\lambda}$  : Absorbance at each wavelength increment

$d\lambda$  : the wavelength step (1 nm)

7. 原始數據：

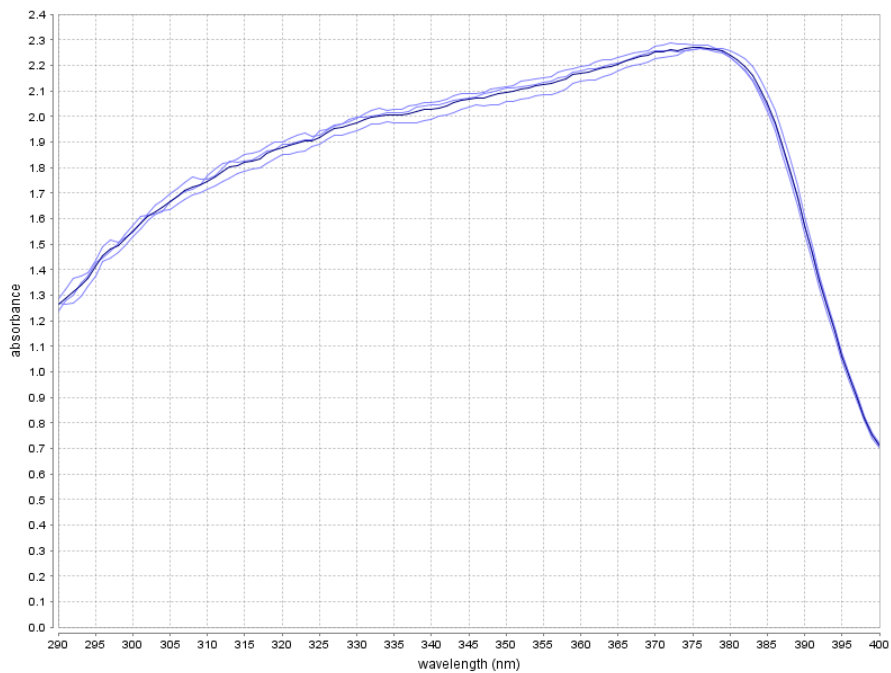
| $\lambda$<br>(nm) | Erythema<br>action<br>spectrum | UV-SSR<br>source<br>(W/m <sup>2</sup> /nm) | Transmittance (%) |      |      |                  |      |      |                  |      |      |
|-------------------|--------------------------------|--|-------------------|------|------|------------------|------|------|------------------|------|------|
|                   |                                |  | MZ2-250400412     |      |      | MZ2-250400412-D1 |      |      | MZ2-250400412-D2 |      |      |
|                   |                                |  | 1st               | 2nd  | 3rd  | 1st              | 2nd  | 3rd  | 1st              | 2nd  | 3rd  |
| 290               | 1.00E+00                       | 8.74E-06                                   | 5.17              | 5.36 | 5.75 | 5.44             | 5.61 | 5.78 | 4.93             | 5.70 | 5.80 |
| 291               | 1.00E+00                       | 1.45E-05                                   | 4.76              | 5.43 | 5.30 | 5.18             | 5.39 | 5.55 | 5.03             | 5.18 | 5.43 |
| 292               | 1.00E+00                       | 2.66E-05                                   | 4.32              | 5.39 | 4.99 | 4.69             | 5.18 | 5.46 | 4.84             | 4.92 | 5.09 |
| 293               | 1.00E+00                       | 4.57E-05                                   | 4.20              | 5.06 | 4.48 | 4.43             | 4.68 | 5.06 | 4.43             | 4.53 | 4.43 |
| 294               | 1.00E+00                       | 1.01E-04                                   | 4.07              | 4.62 | 4.23 | 4.17             | 4.29 | 4.67 | 4.17             | 4.40 | 4.16 |
| 295               | 1.00E+00                       | 2.59E-04                                   | 3.67              | 4.20 | 3.75 | 3.93             | 3.90 | 4.09 | 3.90             | 3.79 | 3.73 |
| 296               | 1.00E+00                       | 7.03E-04                                   | 3.23              | 3.68 | 3.60 | 3.47             | 3.42 | 3.79 | 3.71             | 3.47 | 3.43 |
| 297               | 1.00E+00                       | 1.68E-03                                   | 3.04              | 3.57 | 3.36 | 3.10             | 3.26 | 3.43 | 3.30             | 3.29 | 3.08 |
| 298               | 1.00E+00                       | 3.73E-03                                   | 3.11              | 3.39 | 3.15 | 2.98             | 2.97 | 3.20 | 3.19             | 3.27 | 2.82 |
| 299               | 8.05E-01                       | 7.94E-03                                   | 2.99              | 3.22 | 2.88 | 2.91             | 2.94 | 2.92 | 2.93             | 2.99 | 2.76 |
| 300               | 6.49E-01                       | 1.48E-02                                   | 2.84              | 2.96 | 2.68 | 2.74             | 2.79 | 2.80 | 2.79             | 2.82 | 2.68 |
| 301               | 5.22E-01                       | 2.51E-02                                   | 2.61              | 2.76 | 2.47 | 2.54             | 2.76 | 2.64 | 2.61             | 2.66 | 2.48 |
| 302               | 4.21E-01                       | 4.18E-02                                   | 2.42              | 2.55 | 2.45 | 2.44             | 2.52 | 2.49 | 2.50             | 2.60 | 2.37 |
| 303               | 3.39E-01                       | 6.22E-02                                   | 2.23              | 2.42 | 2.42 | 2.34             | 2.37 | 2.42 | 2.36             | 2.47 | 2.22 |
| 304               | 2.73E-01                       | 8.69E-02                                   | 2.13              | 2.35 | 2.36 | 2.26             | 2.17 | 2.28 | 2.29             | 2.36 | 2.17 |
| 305               | 2.20E-01                       | 1.22E-01                                   | 2.02              | 2.31 | 2.16 | 2.15             | 2.06 | 2.21 | 2.17             | 2.21 | 2.04 |
| 306               | 1.77E-01                       | 1.61E-01                                   | 1.90              | 2.21 | 2.06 | 2.17             | 1.95 | 2.02 | 2.15             | 2.09 | 1.95 |
| 307               | 1.43E-01                       | 1.99E-01                                   | 1.81              | 2.11 | 1.97 | 2.10             | 1.94 | 1.96 | 2.02             | 2.01 | 1.90 |
| 308               | 1.15E-01                       | 2.48E-01                                   | 1.73              | 2.04 | 1.92 | 1.98             | 1.92 | 1.94 | 1.93             | 1.92 | 1.86 |
| 309               | 9.25E-02                       | 2.89E-01                                   | 1.76              | 1.99 | 1.84 | 1.85             | 1.91 | 1.93 | 1.82             | 1.87 | 1.83 |
| 310               | 7.45E-02                       | 3.36E-01                                   | 1.76              | 1.92 | 1.71 | 1.79             | 1.82 | 1.81 | 1.78             | 1.79 | 1.79 |
| 311               | 6.00E-02                       | 3.87E-01                                   | 1.71              | 1.87 | 1.60 | 1.79             | 1.76 | 1.69 | 1.80             | 1.72 | 1.71 |
| 312               | 4.83E-02                       | 4.31E-01                                   | 1.58              | 1.80 | 1.53 | 1.76             | 1.70 | 1.61 | 1.73             | 1.62 | 1.68 |
| 313               | 3.89E-02                       | 4.88E-01                                   | 1.49              | 1.75 | 1.52 | 1.66             | 1.63 | 1.62 | 1.69             | 1.58 | 1.53 |
| 314               | 3.13E-02                       | 5.12E-01                                   | 1.52              | 1.67 | 1.47 | 1.62             | 1.54 | 1.62 | 1.60             | 1.55 | 1.46 |
| 315               | 2.52E-02                       | 5.57E-01                                   | 1.49              | 1.64 | 1.41 | 1.50             | 1.48 | 1.62 | 1.57             | 1.55 | 1.40 |
| 316               | 2.03E-02                       | 5.96E-01                                   | 1.48              | 1.61 | 1.40 | 1.48             | 1.46 | 1.54 | 1.50             | 1.54 | 1.45 |
| 317               | 1.64E-02                       | 6.26E-01                                   | 1.42              | 1.59 | 1.37 | 1.37             | 1.48 | 1.49 | 1.46             | 1.53 | 1.41 |
| 318               | 1.32E-02                       | 6.57E-01                                   | 1.36              | 1.53 | 1.31 | 1.41             | 1.42 | 1.45 | 1.45             | 1.52 | 1.34 |
| 319               | 1.06E-02                       | 6.88E-01                                   | 1.35              | 1.47 | 1.26 | 1.34             | 1.37 | 1.39 | 1.46             | 1.45 | 1.32 |
| 320               | 8.55E-03                       | 7.24E-01                                   | 1.29              | 1.42 | 1.26 | 1.39             | 1.31 | 1.34 | 1.42             | 1.40 | 1.32 |
| 321               | 6.89E-03                       | 7.37E-01                                   | 1.28              | 1.41 | 1.22 | 1.34             | 1.34 | 1.31 | 1.36             | 1.35 | 1.31 |
| 322               | 5.55E-03                       | 7.68E-01                                   | 1.26              | 1.38 | 1.18 | 1.34             | 1.30 | 1.30 | 1.31             | 1.32 | 1.25 |

| $\lambda$<br>(nm) | Erythema<br>action<br>spectrum | UV-SSR<br>source<br>(W/m <sup>2</sup> /nm) | Transmittance (%) |      |      |                  |      |      |                  |      |      |
|-------------------|--------------------------------|--|-------------------|------|------|------------------|------|------|------------------|------|------|
|                   |                                |  | MZ2-250400412     |      |      | MZ2-250400412-D1 |      |      | MZ2-250400412-D2 |      |      |
|                   |                                |  | 1st               | 2nd  | 3rd  | 1st              | 2nd  | 3rd  | 1st              | 2nd  | 3rd  |
| 323               | 4.47E-03                       | 7.95E-01                                   | 1.23              | 1.37 | 1.16 | 1.27             | 1.25 | 1.30 | 1.30             | 1.28 | 1.22 |
| 324               | 3.60E-03                       | 7.99E-01                                   | 1.23              | 1.32 | 1.19 | 1.23             | 1.18 | 1.24 | 1.25             | 1.21 | 1.18 |
| 325               | 2.90E-03                       | 8.29E-01                                   | 1.14              | 1.29 | 1.19 | 1.20             | 1.17 | 1.19 | 1.22             | 1.20 | 1.18 |
| 326               | 2.33E-03                       | 8.44E-01                                   | 1.12              | 1.23 | 1.14 | 1.17             | 1.15 | 1.11 | 1.17             | 1.20 | 1.14 |
| 327               | 1.88E-03                       | 8.56E-01                                   | 1.08              | 1.19 | 1.09 | 1.14             | 1.13 | 1.14 | 1.13             | 1.21 | 1.11 |
| 328               | 1.51E-03                       | 8.79E-01                                   | 1.07              | 1.19 | 1.07 | 1.15             | 1.11 | 1.13 | 1.11             | 1.17 | 1.07 |
| 329               | 1.41E-03                       | 8.95E-01                                   | 1.03              | 1.16 | 1.05 | 1.13             | 1.10 | 1.17 | 1.10             | 1.11 | 1.07 |
| 330               | 1.36E-03                       | 9.01E-01                                   | 1.01              | 1.14 | 1.02 | 1.11             | 1.08 | 1.12 | 1.09             | 1.07 | 1.04 |
| 331               | 1.32E-03                       | 9.16E-01                                   | 1.01              | 1.11 | 0.97 | 1.05             | 1.08 | 1.10 | 1.05             | 1.06 | 1.00 |
| 332               | 1.27E-03                       | 9.43E-01                                   | 1.00              | 1.08 | 0.94 | 1.05             | 1.06 | 1.07 | 1.03             | 1.04 | 0.96 |
| 333               | 1.23E-03                       | 9.44E-01                                   | 0.99              | 1.07 | 0.93 | 1.04             | 1.03 | 1.04 | 1.03             | 1.02 | 0.97 |
| 334               | 1.19E-03                       | 9.43E-01                                   | 0.97              | 1.05 | 0.95 | 1.04             | 1.00 | 1.03 | 1.03             | 0.99 | 0.99 |
| 335               | 1.15E-03                       | 9.57E-01                                   | 0.97              | 1.05 | 0.94 | 1.02             | 1.01 | 0.99 | 1.03             | 0.99 | 0.97 |
| 336               | 1.11E-03                       | 9.66E-01                                   | 0.96              | 1.06 | 0.94 | 1.00             | 0.99 | 1.01 | 1.00             | 0.98 | 0.94 |
| 337               | 1.07E-03                       | 9.77E-01                                   | 0.95              | 1.06 | 0.91 | 0.98             | 1.00 | 0.98 | 0.97             | 0.97 | 0.90 |
| 338               | 1.04E-03                       | 9.77E-01                                   | 0.92              | 1.05 | 0.90 | 0.98             | 0.99 | 0.99 | 0.95             | 0.96 | 0.90 |
| 339               | 1.00E-03                       | 9.97E-01                                   | 0.91              | 1.04 | 0.88 | 0.98             | 1.00 | 0.98 | 0.95             | 0.95 | 0.87 |
| 340               | 9.66E-04                       | 9.94E-01                                   | 0.90              | 1.03 | 0.88 | 0.96             | 0.99 | 0.98 | 0.95             | 0.93 | 0.87 |
| 341               | 9.33E-04                       | 1.01E+00                                   | 0.91              | 1.00 | 0.87 | 0.93             | 0.96 | 0.96 | 0.93             | 0.92 | 0.85 |
| 342               | 9.02E-04                       | 1.01E+00                                   | 0.88              | 0.99 | 0.85 | 0.92             | 0.94 | 0.96 | 0.93             | 0.89 | 0.84 |
| 343               | 8.71E-04                       | 1.01E+00                                   | 0.86              | 0.97 | 0.83 | 0.91             | 0.93 | 0.94 | 0.94             | 0.88 | 0.82 |
| 344               | 8.41E-04                       | 1.02E+00                                   | 0.86              | 0.94 | 0.81 | 0.92             | 0.92 | 0.93 | 0.93             | 0.86 | 0.83 |
| 345               | 8.13E-04                       | 1.03E+00                                   | 0.84              | 0.92 | 0.81 | 0.90             | 0.91 | 0.89 | 0.89             | 0.85 | 0.84 |
| 346               | 7.85E-04                       | 1.03E+00                                   | 0.84              | 0.90 | 0.81 | 0.89             | 0.87 | 0.90 | 0.87             | 0.85 | 0.83 |
| 347               | 7.59E-04                       | 1.03E+00                                   | 0.82              | 0.91 | 0.80 | 0.87             | 0.85 | 0.90 | 0.85             | 0.83 | 0.81 |
| 348               | 7.33E-04                       | 1.04E+00                                   | 0.80              | 0.90 | 0.78 | 0.86             | 0.85 | 0.89 | 0.86             | 0.83 | 0.78 |
| 349               | 7.08E-04                       | 1.03E+00                                   | 0.79              | 0.90 | 0.77 | 0.86             | 0.86 | 0.85 | 0.85             | 0.81 | 0.76 |
| 350               | 6.84E-04                       | 1.05E+00                                   | 0.78              | 0.88 | 0.76 | 0.86             | 0.86 | 0.86 | 0.83             | 0.80 | 0.76 |
| 351               | 6.61E-04                       | 1.04E+00                                   | 0.77              | 0.87 | 0.76 | 0.84             | 0.84 | 0.85 | 0.82             | 0.79 | 0.75 |
| 352               | 6.38E-04                       | 1.04E+00                                   | 0.77              | 0.85 | 0.73 | 0.82             | 0.83 | 0.86 | 0.82             | 0.79 | 0.74 |
| 353               | 6.17E-04                       | 1.04E+00                                   | 0.76              | 0.85 | 0.72 | 0.80             | 0.82 | 0.82 | 0.81             | 0.78 | 0.73 |
| 354               | 5.96E-04                       | 1.04E+00                                   | 0.75              | 0.83 | 0.71 | 0.80             | 0.80 | 0.83 | 0.79             | 0.76 | 0.72 |
| 355               | 5.75E-04                       | 1.05E+00                                   | 0.73              | 0.83 | 0.71 | 0.80             | 0.77 | 0.80 | 0.78             | 0.74 | 0.70 |

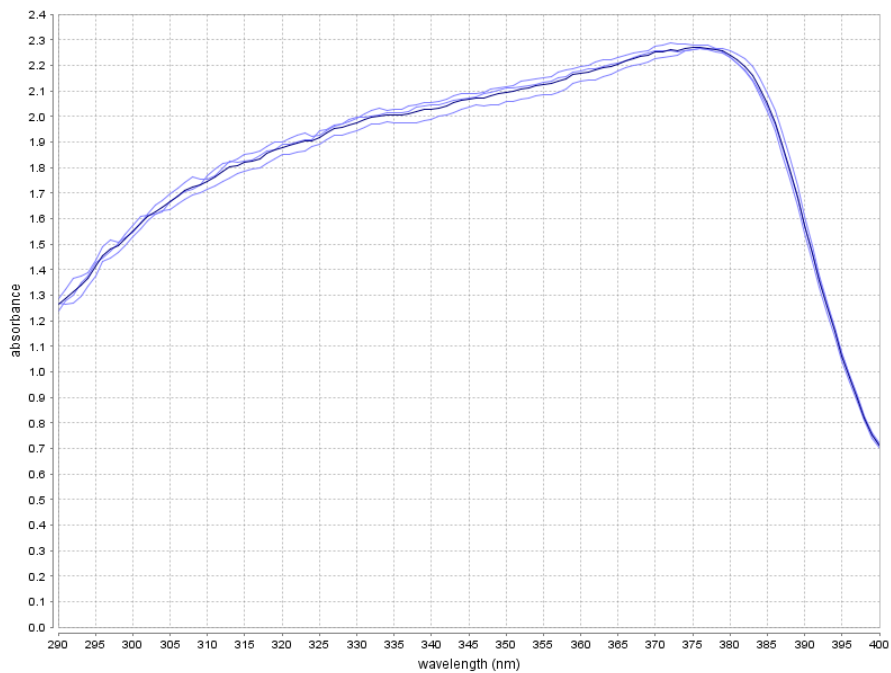
| $\lambda$<br>(nm) | Erythema<br>action<br>spectrum | UV-SSR<br>source<br>(W/m <sup>2</sup> /nm) | Transmittance (%) |      |      |                  |      |      |                  |      |      |
|-------------------|--------------------------------|--|-------------------|------|------|------------------|------|------|------------------|------|------|
|                   |                                |  | MZ2-250400412     |      |      | MZ2-250400412-D1 |      |      | MZ2-250400412-D2 |      |      |
|                   |                                |  | 1st               | 2nd  | 3rd  | 1st              | 2nd  | 3rd  | 1st              | 2nd  | 3rd  |
| 356               | 5.56E-04                       | 1.04E+00                                   | 0.73              | 0.82 | 0.70 | 0.79             | 0.76 | 0.80 | 0.77             | 0.72 | 0.69 |
| 357               | 5.37E-04                       | 1.04E+00                                   | 0.71              | 0.81 | 0.67 | 0.76             | 0.75 | 0.78 | 0.77             | 0.70 | 0.67 |
| 358               | 5.19E-04                       | 1.03E+00                                   | 0.70              | 0.78 | 0.66 | 0.75             | 0.74 | 0.78 | 0.75             | 0.69 | 0.66 |
| 359               | 5.01E-04                       | 1.04E+00                                   | 0.67              | 0.74 | 0.65 | 0.73             | 0.73 | 0.76 | 0.73             | 0.70 | 0.65 |
| 360               | 4.84E-04                       | 1.04E+00                                   | 0.67              | 0.73 | 0.64 | 0.73             | 0.72 | 0.75 | 0.72             | 0.68 | 0.65 |
| 361               | 4.68E-04                       | 1.03E+00                                   | 0.65              | 0.72 | 0.63 | 0.71             | 0.70 | 0.72 | 0.71             | 0.67 | 0.64 |
| 362               | 4.52E-04                       | 1.02E+00                                   | 0.65              | 0.72 | 0.61 | 0.70             | 0.68 | 0.71 | 0.69             | 0.65 | 0.62 |
| 363               | 4.37E-04                       | 1.02E+00                                   | 0.64              | 0.70 | 0.60 | 0.68             | 0.66 | 0.69 | 0.67             | 0.64 | 0.60 |
| 364               | 4.22E-04                       | 9.98E-01                                   | 0.63              | 0.68 | 0.60 | 0.66             | 0.65 | 0.67 | 0.66             | 0.62 | 0.58 |
| 365               | 4.07E-04                       | 9.96E-01                                   | 0.62              | 0.66 | 0.59 | 0.64             | 0.64 | 0.65 | 0.66             | 0.61 | 0.57 |
| 366               | 3.94E-04                       | 9.67E-01                                   | 0.61              | 0.64 | 0.58 | 0.63             | 0.62 | 0.64 | 0.65             | 0.61 | 0.56 |
| 367               | 3.80E-04                       | 9.65E-01                                   | 0.59              | 0.63 | 0.56 | 0.62             | 0.61 | 0.62 | 0.64             | 0.60 | 0.57 |
| 368               | 3.67E-04                       | 9.39E-01                                   | 0.57              | 0.62 | 0.56 | 0.61             | 0.60 | 0.61 | 0.63             | 0.59 | 0.56 |
| 369               | 3.55E-04                       | 9.19E-01                                   | 0.56              | 0.61 | 0.55 | 0.59             | 0.60 | 0.60 | 0.62             | 0.58 | 0.55 |
| 370               | 3.43E-04                       | 8.98E-01                                   | 0.56              | 0.59 | 0.53 | 0.56             | 0.58 | 0.60 | 0.60             | 0.57 | 0.53 |
| 371               | 3.31E-04                       | 8.73E-01                                   | 0.56              | 0.59 | 0.53 | 0.56             | 0.56 | 0.59 | 0.59             | 0.56 | 0.52 |
| 372               | 3.20E-04                       | 8.47E-01                                   | 0.55              | 0.58 | 0.52 | 0.56             | 0.56 | 0.58 | 0.59             | 0.57 | 0.51 |
| 373               | 3.09E-04                       | 8.12E-01                                   | 0.56              | 0.58 | 0.52 | 0.56             | 0.54 | 0.57 | 0.59             | 0.57 | 0.51 |
| 374               | 2.99E-04                       | 7.84E-01                                   | 0.55              | 0.55 | 0.52 | 0.56             | 0.54 | 0.56 | 0.59             | 0.57 | 0.51 |
| 375               | 2.88E-04                       | 7.42E-01                                   | 0.55              | 0.55 | 0.52 | 0.55             | 0.53 | 0.56 | 0.59             | 0.57 | 0.52 |
| 376               | 2.79E-04                       | 7.15E-01                                   | 0.54              | 0.54 | 0.53 | 0.54             | 0.53 | 0.55 | 0.59             | 0.58 | 0.54 |
| 377               | 2.69E-04                       | 6.69E-01                                   | 0.55              | 0.54 | 0.53 | 0.54             | 0.53 | 0.55 | 0.60             | 0.59 | 0.54 |
| 378               | 2.60E-04                       | 6.28E-01                                   | 0.56              | 0.54 | 0.54 | 0.54             | 0.54 | 0.55 | 0.62             | 0.60 | 0.55 |
| 379               | 2.51E-04                       | 5.86E-01                                   | 0.56              | 0.54 | 0.56 | 0.55             | 0.54 | 0.56 | 0.64             | 0.61 | 0.56 |
| 380               | 2.43E-04                       | 5.34E-01                                   | 0.59              | 0.55 | 0.59 | 0.55             | 0.55 | 0.57 | 0.66             | 0.63 | 0.59 |
| 381               | 2.34E-04                       | 4.93E-01                                   | 0.62              | 0.57 | 0.62 | 0.57             | 0.56 | 0.58 | 0.69             | 0.68 | 0.63 |
| 382               | 2.26E-04                       | 4.48E-01                                   | 0.66              | 0.60 | 0.66 | 0.60             | 0.60 | 0.63 | 0.74             | 0.73 | 0.68 |
| 383               | 2.19E-04                       | 3.93E-01                                   | 0.72              | 0.64 | 0.73 | 0.65             | 0.65 | 0.69 | 0.81             | 0.80 | 0.74 |
| 384               | 2.11E-04                       | 3.43E-01                                   | 0.80              | 0.71 | 0.82 | 0.72             | 0.72 | 0.76 | 0.92             | 0.89 | 0.83 |
| 385               | 2.04E-04                       | 2.99E-01                                   | 0.92              | 0.81 | 0.95 | 0.84             | 0.83 | 0.88 | 1.06             | 1.03 | 0.95 |
| 386               | 1.97E-04                       | 2.57E-01                                   | 1.08              | 0.95 | 1.14 | 0.99             | 0.98 | 1.05 | 1.27             | 1.20 | 1.14 |
| 387               | 1.91E-04                       | 2.15E-01                                   | 1.32              | 1.15 | 1.41 | 1.20             | 1.20 | 1.27 | 1.55             | 1.45 | 1.41 |
| 388               | 1.84E-04                       | 1.80E-01                                   | 1.65              | 1.45 | 1.77 | 1.52             | 1.51 | 1.60 | 1.92             | 1.79 | 1.79 |

| $\lambda$<br>(nm) | Erythema<br>action<br>spectrum | UV-SSR<br>source<br>(W/m <sup>2</sup> /nm) | Transmittance (%) |       |       |                  |       |       |                  |       |       |
|-------------------|--------------------------------|--|-------------------|-------|-------|------------------|-------|-------|------------------|-------|-------|
|                   |                                |  | MZ2-250400412     |       |       | MZ2-250400412-D1 |       |       | MZ2-250400412-D2 |       |       |
|                   |                                |  | 1st               | 2nd   | 3rd   | 1st              | 2nd   | 3rd   | 1st              | 2nd   | 3rd   |
| 389               | 1.78E-04                       | 1.49E-01                                   | 2.09              | 1.88  | 2.24  | 1.95             | 1.95  | 2.05  | 2.44             | 2.24  | 2.28  |
| 390               | 1.72E-04                       | 1.19E-01                                   | 2.67              | 2.45  | 2.87  | 2.51             | 2.52  | 2.65  | 3.10             | 2.83  | 2.91  |
| 391               | 1.66E-04                       | 9.40E-02                                   | 3.40              | 3.21  | 3.68  | 3.24             | 3.26  | 3.40  | 3.95             | 3.58  | 3.69  |
| 392               | 1.60E-04                       | 7.27E-02                                   | 4.31              | 4.16  | 4.67  | 4.18             | 4.20  | 4.37  | 5.01             | 4.50  | 4.68  |
| 393               | 1.55E-04                       | 5.53E-02                                   | 5.45              | 5.33  | 5.88  | 5.34             | 5.36  | 5.57  | 6.29             | 5.63  | 5.88  |
| 394               | 1.50E-04                       | 4.01E-02                                   | 6.83              | 6.75  | 7.33  | 6.72             | 6.78  | 7.06  | 7.80             | 7.00  | 7.32  |
| 395               | 1.45E-04                       | 2.88E-02                                   | 8.43              | 8.41  | 9.05  | 8.38             | 8.43  | 8.76  | 9.55             | 8.59  | 8.97  |
| 396               | 1.40E-04                       | 2.07E-02                                   | 10.31             | 10.35 | 10.96 | 10.25            | 10.33 | 10.73 | 11.54            | 10.40 | 10.85 |
| 397               | 1.35E-04                       | 1.40E-02                                   | 12.42             | 12.53 | 13.15 | 12.42            | 12.50 | 12.92 | 13.79            | 12.48 | 12.97 |
| 398               | 1.30E-04                       | 9.51E-03                                   | 14.79             | 15.03 | 15.51 | 14.81            | 14.95 | 15.44 | 16.24            | 14.80 | 15.34 |
| 399               | 1.26E-04                       | 6.19E-03                                   | 17.33             | 17.72 | 18.13 | 17.43            | 17.60 | 18.12 | 18.91            | 17.34 | 17.89 |
| 400               | 1.22E-04                       | 4.17E-03                                   | 19.09             | 19.61 | 19.90 | 19.23            | 19.42 | 19.98 | 20.73            | 19.07 | 19.64 |

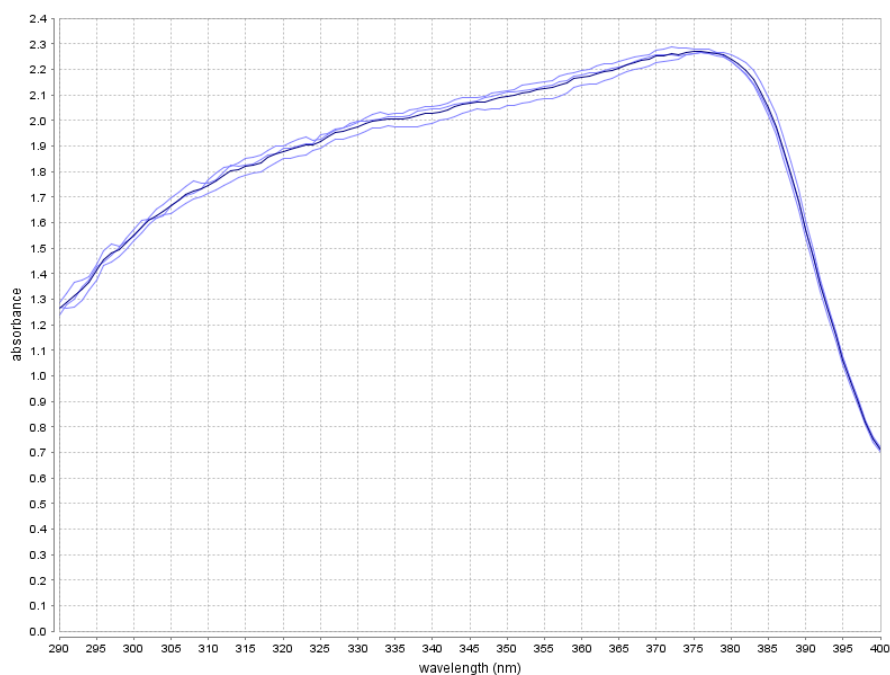
Colipa spectra plot



FDA spectra plot

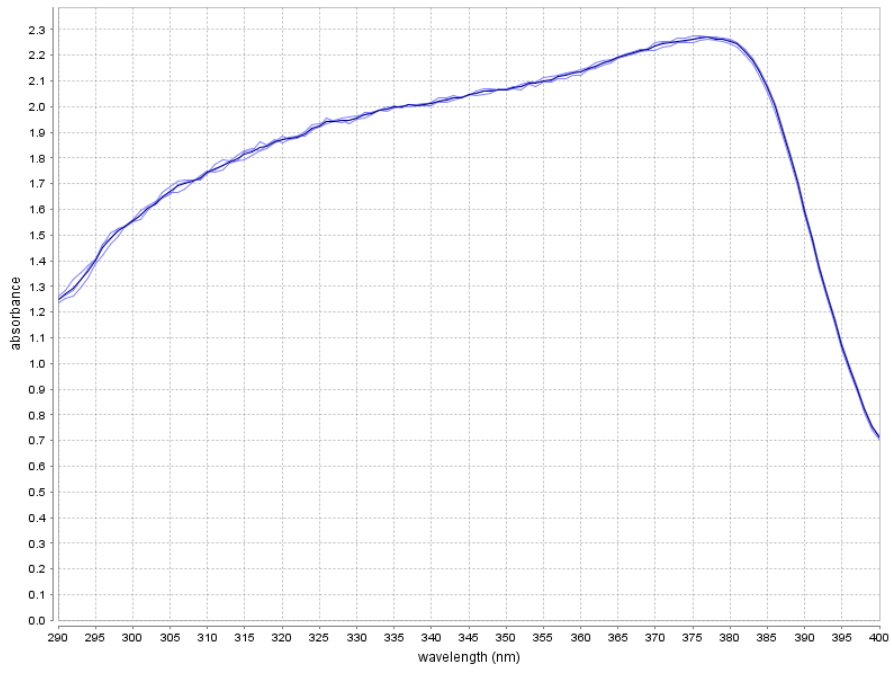


Boots spectra plot

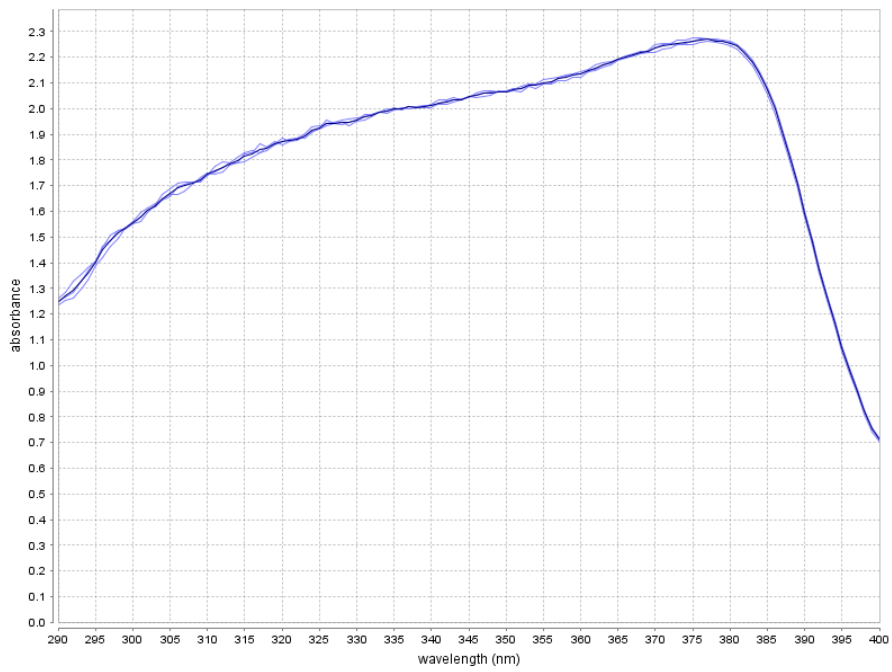


| Parameter                           | Value                     |
|-------------------------------------|---------------------------|
| SPF                                 | 54.22                     |
| SPF label                           | 54.22                     |
| UVAPF in vivo                       | not selected              |
| SPF UVA range (320-400 nm)          | 96.02                     |
| SPF UVB range (290-320 nm)          | 50.93                     |
| unretained UVA average T%           | 2.07                      |
| unretained Short UVA average T%     | 0.89                      |
| C factor                            | 1,000                     |
| SPF adjusted                        | 54.22                     |
| UVAPF0                              | 125.13                    |
| UVAPF                               | not calculated            |
| Ratio (SPFlabel/UVAPF)              | not calculated            |
| UVA dose                            | 150.158 J/cm <sup>2</sup> |
| exposure energy                     | not set                   |
| conversion factor                   | not set                   |
| exposure time                       | 0 s (00:00:00)            |
| critical lambda (pre-irradiation)   | 385 nm                    |
| critical lambda (after-irradiation) | not calculated            |
| UVA-I/UV FDA                        | not calculated            |
| critical lambda FDA                 | not calculated            |
| Star Rating FDA                     | not calculated            |
| Ratio UVA/UVB                       | 1.20                      |
| UVA/UVB after-irradiation Boots     | not calculated            |
| critical lambda Boots               | not calculated            |
| Boots Star rating                   | not calculated            |
| Japan PA rating                     | not calculated            |

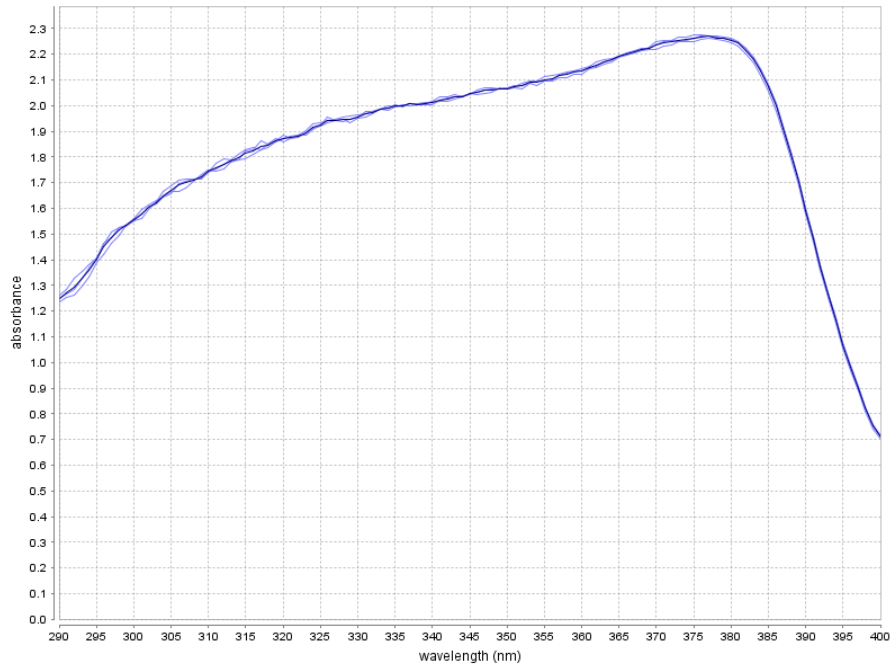
Colipa spectra plot



FDA spectra plot

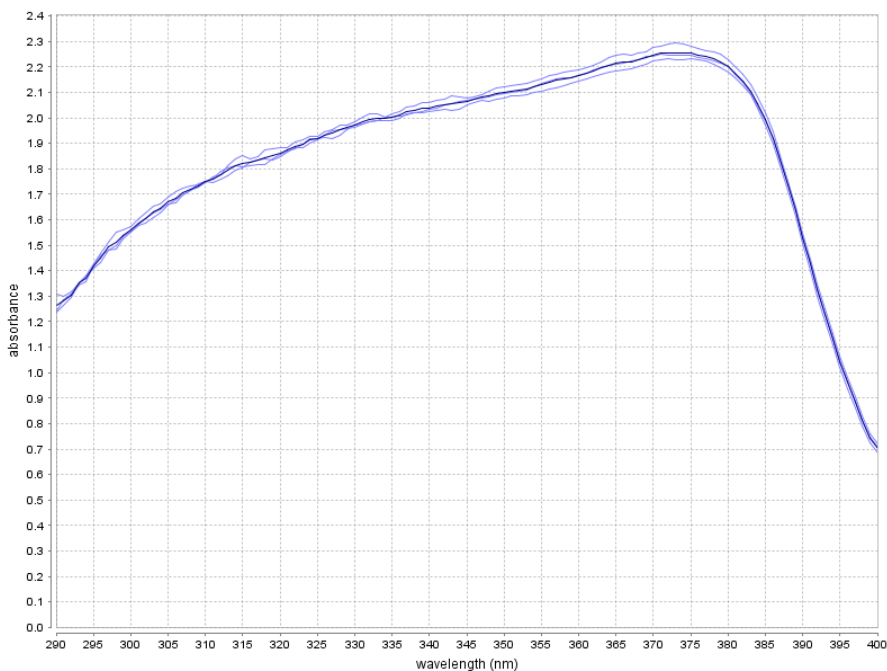


Boots spectra plot

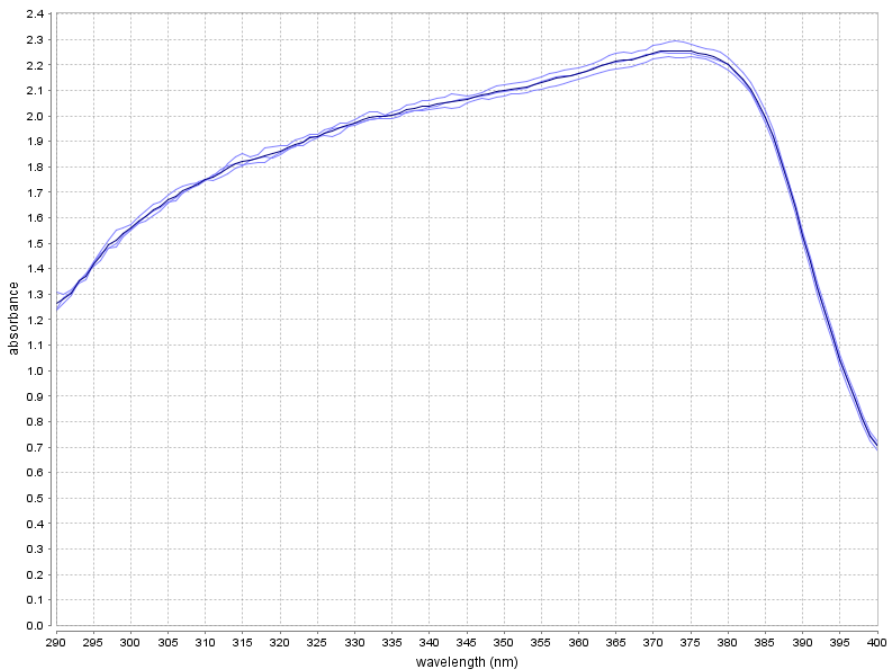


| Parameter                           | Value                     |
|-------------------------------------|---------------------------|
| SPF                                 | 53.83                     |
| SPF label                           | 53.83                     |
| UVAPF in vivo                       | not selected              |
| SPF UVA range (320-400 nm)          | 93.82                     |
| SPF UVB range (290-320 nm)          | 50.62                     |
| unretained UVA average T%           | 2.07                      |
| unretained Short UVA average T%     | 0.92                      |
| C factor                            | 1.000                     |
| SPF adjusted                        | 53.83                     |
| UVAPF0                              | 121.27                    |
| UVAPF                               | not calculated            |
| Ratio (SPFlabel/UVAPF)              | not calculated            |
| UVA dose                            | 145.528 J/cm <sup>2</sup> |
| exposure energy                     | not set                   |
| conversion factor                   | not set                   |
| exposure time                       | 0 s (00:00:00)            |
| critical lambda (pre-irradiation)   | 385 nm                    |
| critical lambda (after-irradiation) | not calculated            |
| UVA-I/UV FDA                        | not calculated            |
| critical lambda FDA                 | not calculated            |
| Star Rating FDA                     | not calculated            |
| Ratio UVA/UVB                       | 1.20                      |
| UVA/UVB after-irradiation Boots     | not calculated            |
| critical lambda Boots               | not calculated            |
| Boots Star rating                   | not calculated            |
| Japan PA rating                     | not calculated            |

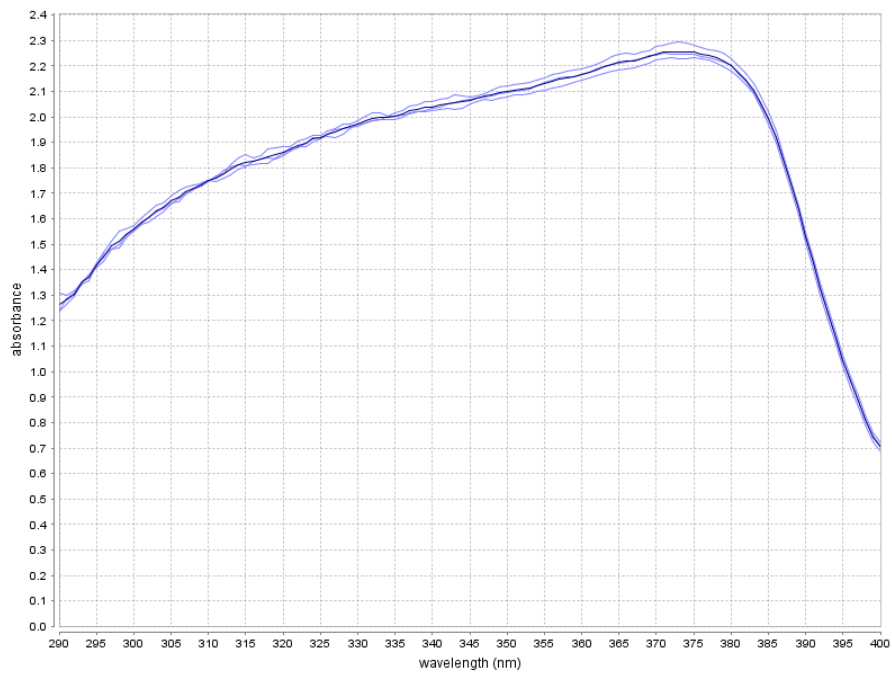
Colipa spectra plot



FDA spectra plot



Boots spectra plot



| Parameter                           | Value                     |
|-------------------------------------|---------------------------|
| SPF                                 | 54.27                     |
| SPF label                           | 54.27                     |
| UVAPF in vivo                       | not selected              |
| SPF UVA range (320-400 nm)          | 95.17                     |
| SPF UVB range (290-320 nm)          | 50.99                     |
| unretained UVA average T%           | 2.13                      |
| unretained Short UVA average T%     | 0.88                      |
| C factor                            | 1,000                     |
| SPF adjusted                        | 54.27                     |
| UVAPF0                              | 123.94                    |
| UVAPF                               | not calculated            |
| Ratio (SPFlabel/UVAPF)              | not calculated            |
| UVA dose                            | 148.727 J/cm <sup>2</sup> |
| exposure energy                     | not set                   |
| conversion factor                   | not set                   |
| exposure time                       | 0 s (00:00:00)            |
| critical lambda (pre-irradiation)   | 385 nm                    |
| critical lambda (after-irradiation) | not calculated            |
| UVA-I/UV FDA                        | not calculated            |
| critical lambda FDA                 | not calculated            |
| Star Rating FDA                     | not calculated            |
| Ratio UVA/UVB                       | 1.19                      |
| UVA/UVB after-irradiation Boots     | not calculated            |
| critical lambda Boots               | not calculated            |
| Boots Star rating                   | not calculated            |
| Japan PA rating                     | not calculated            |