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〈教育セミナー〉

光老化を防御する―光に関する基本知識から最新のサンケア製品まで―

# 紫外線防止効果測定について
## ―SPF・PA 測定法の現状と課題―

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# Sun Protection Test Methods
## —Current Situation and Future Issues of Measurement and Labeling of SPF and PA—

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**Abstract**

When our skin is exposed to the solar light, perceptible skin reactions are induced by ultraviolet A ray (UVA) and ultraviolet B ray (UVB). UVB causes erythema after several hours followed by pigmentation called delayed tanning after a few days. On the other hand, the skin exposed to UVA exhibits grayish brown colored pigmentation immediately after UVA exposure without causing erythema. The pigmentation persists more than several hours and the color gradually changes to brown. This persistent pigmentation is called persistent pigment darkening (PPD) reaction. To indicate the UV protection level of sunscreen, SPF and PA labeling are used. SPF stands for "Sun Protection Factor" and PA stands for "Protection Grade of UVA." The number of SPF means the number of times longer that you will be protected from getting erythema, which is mainly induced by UVB, with sunscreen than you will be without sunscreen. PA grade is determined based on the protection level of PPD reaction induced by UVA. In the case of PA labeling, the degree of protection is labeled as PA+, PA++, PA+++ or PA++++ on a sunscreen product. The more plus (+) mark means the more protection level against UVA. The current test methods related to UV protection are harmonized globally. Global standard ISO24444 is adopted as Japanese standard test method for SPF measurement and ISO24442 is adopted as Japanese standard test method for UVA protection measurement.

**Key words:**　UV protection, SPF, PA, ISO24442, ISO24444.