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The ALT-SPF partnership will evaluate alternative sunscreen testing methods

A consortium of users and developers of sun protection factor (SPF) tests will identify, characterise, and evaluate alternative sunscreen testing methods.

The SPF value reflects the level of protection offered by sun care products and is connected to the protection against DNA damage, which causes skin cancer – a disease whose incidence is rising worldwide. The current gold standard for SPF testing, ISO 24444, involves testing on human subjects, which makes the procedure time consuming, complex, and costly. The objective of the ALT-SPF partnership is to facilitate the development of new testing methods that shall also be less invasive, more precise, and more cost-effective than ISO 24444.

The partnership, which was kicked off in July 2021, will test a set of 32 sunscreen samples covering a large spectrum of product types by using the current gold standard - ISO 24444 - and five alternative methods that include *in vitro*, *in silico* and non-invasive *in vivo* testingⁱ in the next 12 months. For each alternative method included in the study, test results are compared to those obtained from the same samples with the current method of reference. Alternative methods are then evaluated and characterized using statistically proven modelsⁱⁱ. The results of the study will be published in a peer-reviewed journal and will serve norming or standardisation bodies as a basis to harmonise and develop standard methods for sun protectionⁱⁱⁱ.

“ALT-SPF combines our industry resources to realise a long-time wish to characterise new, alternative SPF methods sufficiently in terms of accuracy (trueness and precision) in comparison to the *in vivo* SPF as defined by the ISO 24444 gold standard,” explains Jürgen Vollhardt, Global Head of Science & Promotion Sun Care at DSM and one of the initiators of ALT-SPF. “Alternative measurements should neither over- nor underestimate the SPF values. This will allow bodies such as ISO to validate such methods and recommend them for general or specific use. We also want to give all relevant alternative methods a chance to compare themselves with the gold standard.”

The consortium^{iv} brings together 28 partners in 10 countries, representing both personal care companies as well as laboratories developing alternative SPF tests. The project is managed by Cosmetics Europe - the European trade association for the cosmetics and personal care industry.

ⁱ Double plate method (ISO draft 23675); HDRS method (ISO draft 23698); Fused method; *In silico* method; LED-HDRS method

ⁱⁱ ISO 5725

ⁱⁱⁱ For example, standardisation projects ISO 23675, ISO 23698

^{iv} Cosmetics Europe - The Personal Care Association A.I.S.B.L.; **Australia:** Ego Pharmaceuticals Pty Ltd.; **Brazil:** Allergisa Pesquisa Dermato-Cosmética LTDA; **Denmark:** Riemann A/S; **France:** Coty Lancaster, Helioscience SARL, HelioScreen Cosmetic Science SAS, L'Oréal, NAOS LES LABORATOIRES SAS, Pierre Fabre Dermo-Cosmétique; **Germany:** BASF SE, Beiersdorf AG, Courage + Khazaka electronic GmbH, Dermatest GmbH, German Society for Scientific and Applied Cosmetics e.V, Institut Dr. Schrader Hautphysiologie, Merck KGaA, proDERM Institut für Angewandte Dermatologische Forschung GmbH, Symrise AG; **Ireland:** Public Analyst's Laboratory, Cork; **Poland:** Eurofins DermScan Poland Sp. z o.o.; **Spain:** ISDIN S.A.; **Switzerland:** Mibelle AG, DSM Nutritional Products Ltd., Société Générale de Surveillance S.A; **USA:** Johnson & Johnson Consumer Inc., Procter & Gamble Services Company NV, Solar Light Company, Inc.