

Sodium stearoyl glutamate: Another amino acid alkyl amide sensitizer in cosmetics

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Recently, several cases of allergic contact dermatitis (ACD) have been reported due to amino acid alkyl amides (AAAAAs) in cosmetics.^{1,2} We here report a first case of ACD from sodium stearoyl glutamate (CAS no. 38517-23-6), an AAAA derived from glutamic acid/glutamate, used for its conditioning, cleansing and emulsifying properties.

CASE REPORT

An otherwise healthy atopic 40-year-old female nurse was referred because of two episodes of acute ACD from two different cosmetic products. The first episode occurred 1 day following the application of a body lotion (Nuit polaire lait corps hydratant aux algues boréales; laboratoires Polaar, Paris, France) and the dermatitis was localized at the application sites of the body lotion (i.e., on the face, trunk and upper and lower limbs). The reaction had been so severe that treatment with both systemic and topical corticosteroids had

been necessary. Three months later, 1 day following the application of an after-sun (Nuxe Sun, Boulogne-Billancourt, France) a similarly severe ACD occurred over the décolleté and upper limbs. Six months later, patch tests were performed, according to ESCD guidelines,³ with the European baseline series, a cosmetic series, and both creams (tested semi-open and 'as is' on patch). All test preparations were mounted on Finn chambers (SmartPractice, Calgary, Canada) and occluded for 2 days. Readings on day (D)3 and D4 showed ++ reactions only to the two cosmetic products (semi-open and patch tests). The ingredients common to both products were: glycerine, sodium stearoyl glutamate, linalool and geraniol. Three months later, following contact with the manufacturers, we received the different ingredients, albeit only from the after-sun, which were tested as above, and revealed positive reactions (D3, D4) to sodium stearoyl glutamate (1% aq.) (++) and also to the related AAAA capryloyl glycine (1% aq.) (+), the latter also being present in the after-sun (Figure 1).

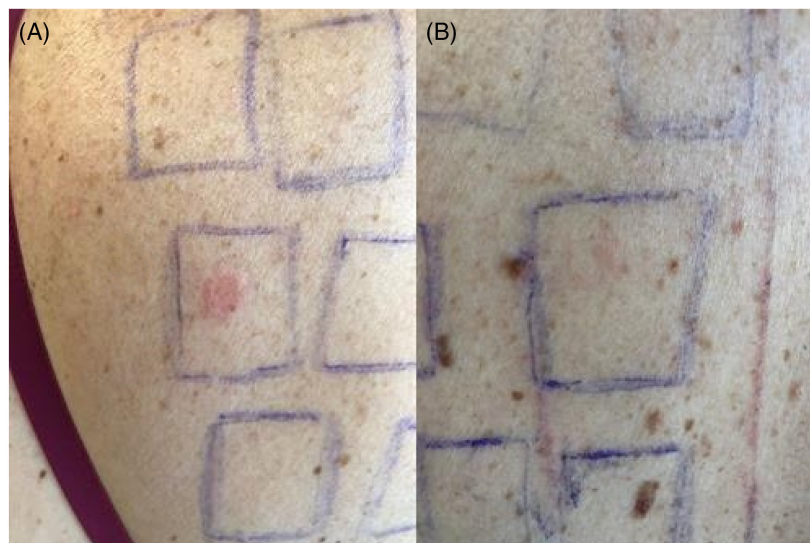


FIGURE 1 Positive patch test reactions, on day (D)3, to (A) sodium stearoyl glutamate 1% aq. (++) and to the related (B) capryloyl glycine 1% aq. (+)

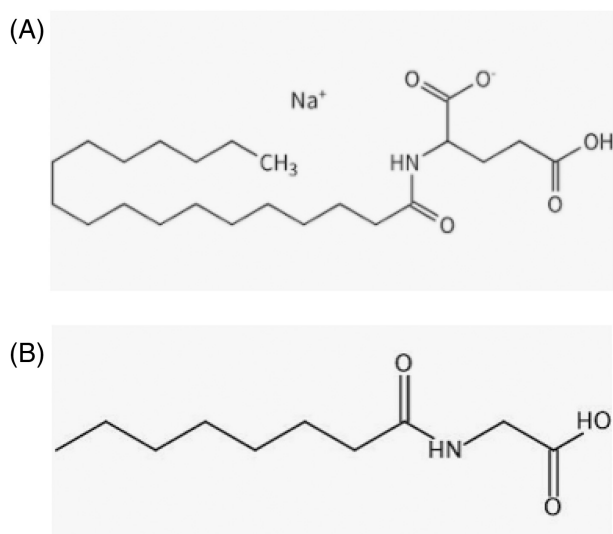


FIGURE 2 Chemical structures of (A) sodium stearoyl glutamate and (B) capryloyl glycine

DISCUSSION

In recent years, cases of ACD have been reported to different AAAAs, derivatives of glycine, tyrosine and sarcosinate, in particular (for an overview, see Reference 1). Although initially these amino acid derivatives were considered safe for use in cosmetics,² it has become clear that these components do possess skin sensitizing properties, sometimes leading to severe ACD, for example, characterized by the occurrence of pronounced facial edema.^{1,4} Also in the current case, the skin reaction was so severe that systemic corticosteroids had been necessary to alleviate the patient's condition. Recently published cases of ACD from AAAAs concerned oleoyl tyrosine,^{1,4} isopropyl lauroyl sarcosinate⁵ and capryloyl glycine, the latter also potentially present in hydrating creams used by atopic dermatitis patients.^{6,7} Because in our patient both episodes of ACD occurred quite rapidly, that is, within 1 day after using both creams, she had likely been previously sensitized to these substances, or to one of them, as their similar chemical structure might also allow cross-reactivity (Figure 2). Co-reactivity, from concomitant exposure, is an alternative explanation for the second episode, as

both sodium stearoyl glutamate and capryloyl glycine were present in the same culprit product (i.e., after-sun). In conclusion, we reported a first case of ACD from sodium stearoyl glutamate, adding to the evidence that AAAAs are indeed an emerging class of cosmetic sensitizers.

CONFLICT OF INTEREST

Olivier Aerts is investigator, consultant and/or speaker for Leo Pharma and L'Oréal/La Roche Posay. Ella Dendooven and Pauline Pralong have no conflicts to declare.

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