

Mandom obtains approval from the Japanese Ministry of Health, Labor and Welfare for the novel effect of “scalp sweat odor prevention”, for the first time in Japan
- Lysozyme hydrochloride, isopropylmethylphenol, and zinc p-phenolsulfonate exert an effect on scalp sweat odor prevention-

Mandom Corporation (Head Office: Osaka, President Executive Officer: Motonobu Nishimura, hereafter “Mandom”) through studies on body odor has uncovered the presence of “middle-aged oily odor”, an oily and sweaty odor, distinctive to Japanese middle-aged men, which is emitted mainly from the back of the head. Mandom has applied the results of their research into the development of a product that can combat the odor emitted from the scalp.

During research into body odor, we discovered that the combination of lysozyme hydrochloride, isopropylmethylphenol, and zinc p-phenolsulfonate could effectively prevent sweat odor from the scalp, even if the scalp is oily. Hence, for the first time in Japan, the efficacy of a quasi-drug product containing these three active ingredients for the prevention of sweat odor from the scalp was recognized, and has been approved by the Japanese Ministry of Health, Labor and Welfare for a “scalp sweat odor prevention” effect.

1. The head ranked second after armpits as an “odor-concerning” body part, but a remedy to deal with this during the day does not exist

Our online survey conducted on men in their late 30s to 40s and women in their 20s to 50s revealed that they were most concerned with odor from the head, after the armpits (Figures 1, 2). In addition, an odor intensity measurement test on various body parts conducted on men in their 40s and 50s revealed that the odor from the head tended to be stronger in intensity than that from the armpits (Figure 3). However, there is currently no other way to deal with the odor other than careful shampooing, and no daytime remedy exists.

2. Technology developed with three active ingredients for deodorizing even oily scalps

As sweaty odor emerges when the Staphylococcus epidermis bacteria metabolize the substances contained in the sweat, the sterilization and suppression of sweat is an effective method to prevent odor. However, sebum on the scalp is considered an issue in the prevention of odor from the head (sweat odor from the scalp).

Generally, the scalp is known to have relatively high sebum content compared with other body parts. It is already known that the sterilizing capacity of isopropylmethylphenol is reduced in the presence of oily substances, as it is incorporated in the oil. However, when isopropylmethylphenol is used with lysozyme hydrochloride, which is less easily incorporated in the oil, a sterilizing effect occurs even in the presence of oily substances. Furthermore, it has been revealed that the sterilizing capacity intensifies as the density of lysozyme hydrochloride was increased (Figure 4). The application of this research allowed us to efficiently sterilize the scalp, even if the skin has a high

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sebum content. In addition, by the addition of zinc p-phenolsulfonate as an antiperspirant, we were able to develop a product that prevents scalp sweat odor.

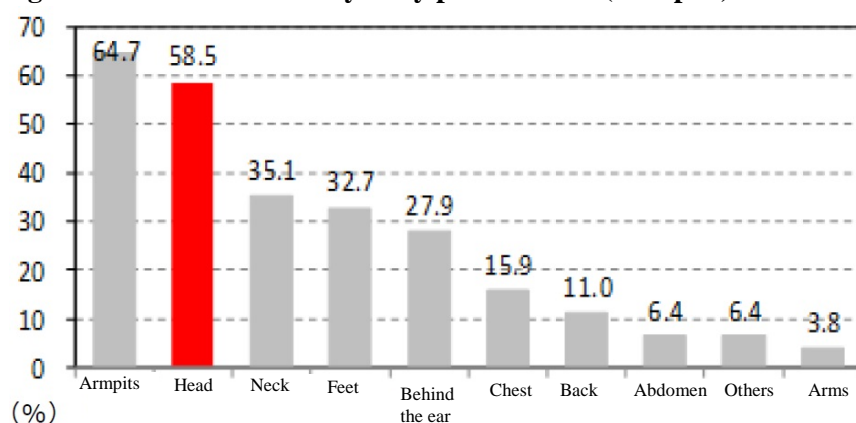
3. Confirming the effectiveness of preventing sweat odor from the scalp by an odor intensity evaluation during actual use

The deodorization capabilities of the product containing the above three active ingredients were evaluated after continuous use on the scalp for 2 weeks. As a result, the intensity of the odor was significantly reduced when compared with before its use. In addition, the intensity of the sweat odor of the scalp after the continuous usage of the product was maintained at the same level as immediately after shampooing, even after 24 hours, which confirmed the product had an adequate deodorization effect (Figure 5).

Mandom will utilize these findings, and plan to continue the release of deodorant products that can prevent “scalp sweat odor”.

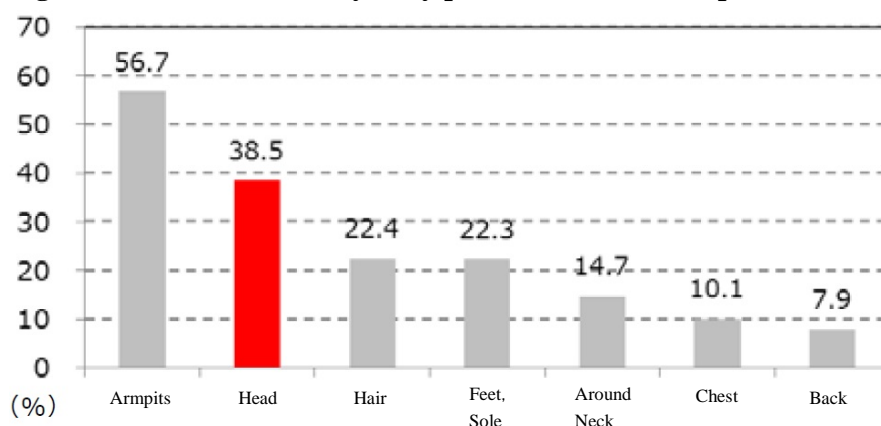
【References】

Figure 1. Odor concerns by body part for men (in Japan)



Men in their late 30s to 40s / n=14863 / June 2013 / Online survey (by Mandom)

Figure 2. Odor concerns by body part for women (in Japan)



Women in their 20s to 50s / n=10000 / March 2018 / Online survey (by Mandom)

Figure 3. Intensity of odor of each area of the body in Japanese middle-aged men (40s to 50s)

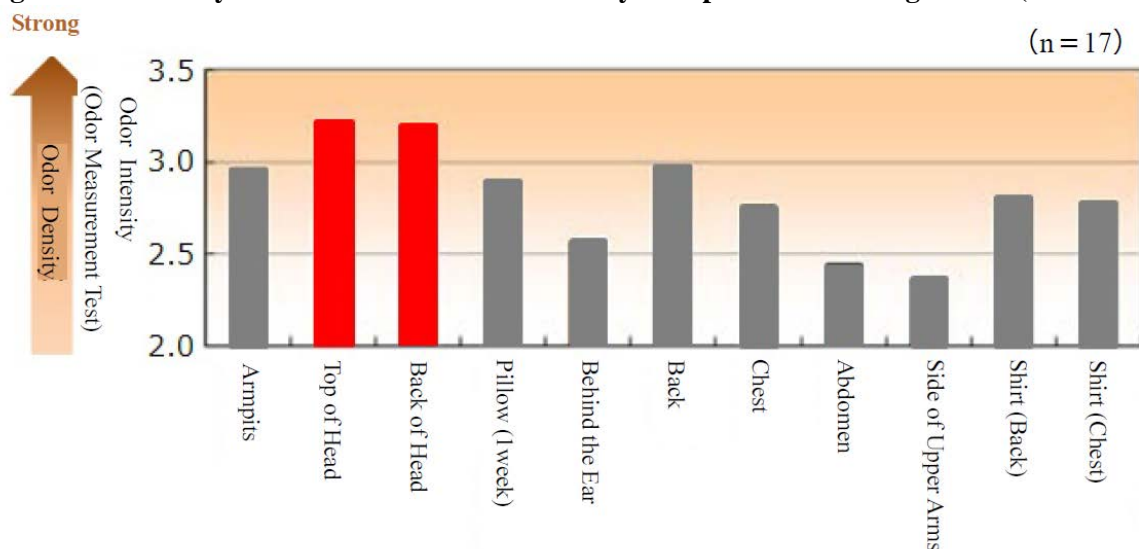
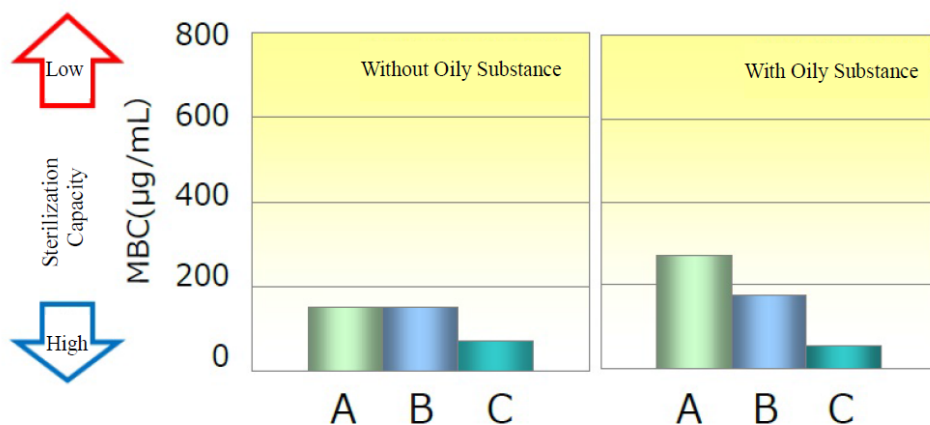


Figure 4. Complementary sterilizing effect of addition of lysozyme hydrochloride to isopropylmethylphenol (IPMP)

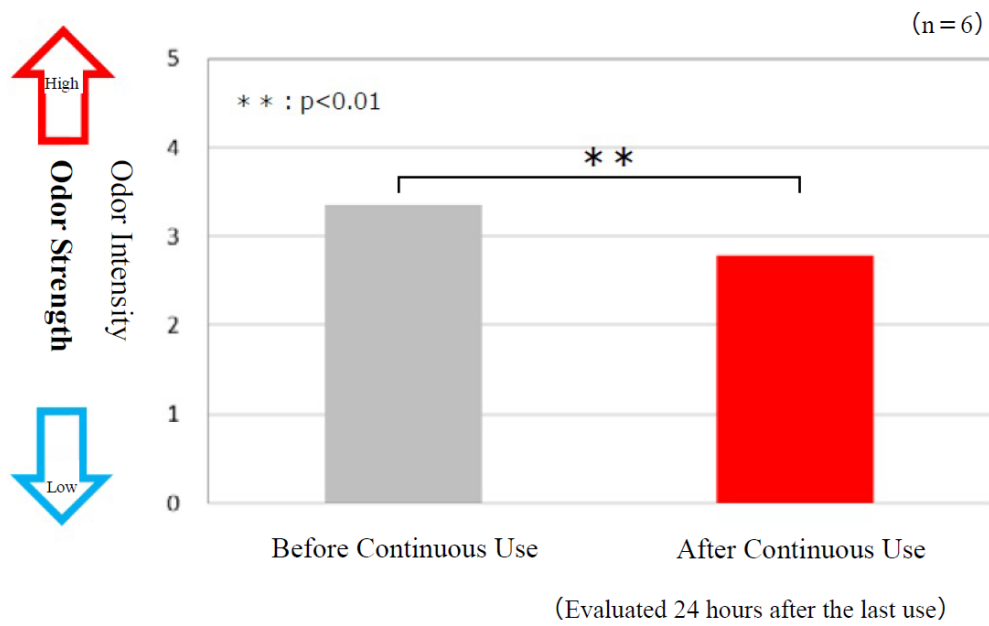


※MBC: minimum bactericidal concentration

A: IPMP Only (No lysozyme hydrochloride)
 B: IPMP + 0.15% lysozyme hydrochloride
 C: IPMP + 0.30% lysozyme hydrochloride

Figure 5. The effectiveness of preventing scalp sweat odor

Comparison of the intensity of the scalp sweat odor before and after continuous use



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