

1 The influence of essential oils on *Staphylococcus* spp. 2 isolated from skin microbiota

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11 Essential oils constitute a rich source of bioactive compounds and serve as common additives
12 in the cosmetic and pharmaceutical industries. Because they are often applied directly to the skin, we
13 aimed at determining the influence of essential oils on *Staphylococcus* spp. isolated from healthy skin
14 microbiota.

15 A microbroth dilution method was used to determine the antimicrobial activity of thyme
16 (*Thymus vulgaris* L.), mellisa (*Melissa officinalis* L.), sage (*Salvia officinalis* L.), peppermint (*Mentha piperita*
17 L.), tea tree (*Melaleuca alternifolia*) and oregano (*Origanum vulgare* L.) essential oils against reference
18 staphylococci as well as 21 strains isolated from healthy skin represented by seven species:
19 *Staphylococcus saprophyticus*, *S. haemolyticus*, *S. lentus*, *S. warneri*, *S. aureus*, *S. epidermidis*, and *S. hominis*.

20 The analysis showed that oregano and thyme essentials oils exhibited the highest anti-
21 staphylococcal activity (MIC ranging from 0,5 to 2 mg/ml), followed by tee tree and mellisa oils (MIC
22 ranging from 2 to 8 mg/ml), and sage and peppermint oils (MIC ranging from 4 to 16 mg/ml). All of the
23 essential oils showed bactericidal activity.

24 Because of the low MIC values, part of the examined essential oils showed significant
25 antibacterial activity giving them the potential of usage as supportive agents in the treatment of skin
26 infections. Due to high activity against commensal staphylococci, thyme, and oregano essential oils can
27 disrupt skin microbiota homeostasis, which underlines the necessity of careful skin application.

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