

Hand-held device for fluorescence excitation and for irradiating microorganisms in the
mouth and throat

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Abstract

The invention relates to a hand-held device for excitation and irradiation of pathogenic microorganisms in the mouth and throat, e.g. a toothbrush comprising at least one excitation light source in the short-wave visible spectral range for auto-fluorescence
10 excitation of the pathogenic microorganisms, at least one primary irradiation light source in the red spectral range for primary irradiation of the pathogenic microorganisms and for transillumination, and optionally at least one secondary irradiation light source in the visible spectral range for secondary irradiation of the pathogenic microorganisms, wherein the irradiation light sources have spectral components that can be absorbed by
15 endogenous porphyrins, which are produced by the pathogenic microorganisms, whereby a fluorescence excitation and an inactivation of the pathogenic microorganisms occurs on the basis of subsequent processes. In order to prevent the unintentional irradiation of the eyes, a pressure sensor is designed to release higher light intensities only once a contact pressure has been measured. In addition, the radiation must leave
20 the hand-held device in a divergent manner. The spatially resolved detection of the fluorescence of the pathogenic microorganisms can optionally be used to induce the inactivation of the bacteria by targeted irradiation in the fluorescent range.

[Fig. 3]

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