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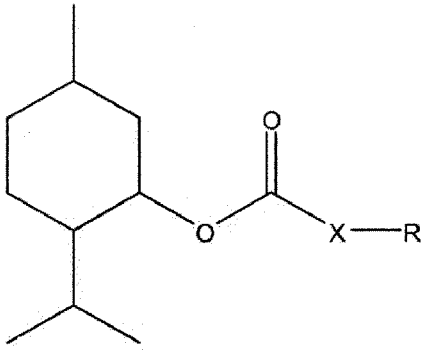
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(54) **Title**: MENTHOL-DERIVATIVE COMPOUNDS AND USE THEREOF AS ORAL AND SYSTEMIC ACTIVE AGENTS



Formula 1

(57) **Abstract**: The present invention discloses novel uses of specific menthol-derivative compounds of Formula 1, and compositions thereof, for methods of providing oral and systemic health care benefits, and methods of up-regulating or down-regulating periodontal disease metabolites: Formula 1 wherein, X is an oxygen atom or an NH radical; and R is an unsubstituted or substituted aryl or aliphatic radical. In some embodiments, the oral and systemic health care benefits include biofilm anti- attachment, anti-inflammation, anti-oxidant, anti-bone loss, and anti-microbial benefits. In some embodiments, the periodontal disease metabolites correspond to healthy and/or diseased oral status and allow differential diagnosis of oral health.