

Abstract

Secretion of cephalic labial gland of Buff-tailed bumblebee males (*Bombus terrestris*) contains a mixture of terpene alcohols, aliphatic alcohols, esters and alkanes with small amount of aldehydes potentially biosynthesized of (*S*)-2,3-dihydrofarnesol and geranylcitronellol (major alcoholic compounds). This secretion acts as a marking and luring pheromone during patrolling. This study is focused on oxidation of terpene alcohols using enzymes of cephalic labial gland of a bumblebee. *In vitro* incubations were accomplished with homogenate of cephalic labial gland and a various substrates: *E,E*-farnesol, geraniol, 2,3-dihydrofarnesol, hexadecanol.

Conditions of incubations and following analysis using gas chromatography were optimized. Two products were detected of farnesol and geraniol incubations, which then later were identified using chemical oxidation with pyridinium-chlorochromate, measurement of NMR specters and MS specters, as two isomers of 2,3-bond. Hexadecanol was not oxidized.