

Stereospecific synthesis of insect pheromones of *E*-alkene series based on isopropyl 3*E*,8-nonadienoates – the product of catalytic telomerization of butadiene or carbon oxide

© Gumer Yu. Ishmuratov,* Valentina A. Vydrina, Marina P. Yakovleva,⁺ Gulshat V. Nasibullina, Rinat R. Muslukhov, and Nailya M. Ishmuratova

Institute of Organic Chemistry. Ufa Scientific Center, RAS. Octyabr Prospect, 71. Ufa, 450054.

Bashkortostan Republic. Russia. Fax: +7 (3472) 35-60-66. E-mail: insect@anrb.ru

Phone: +7 (352) 58-67-66; +7 (352) 58-68-45.

*Supervising author; ⁺Corresponding author

Keywords: isopryl 3*E*,8-nonadienoate, *E*-monoenic pheromone, synthesis.

Abstract

We have implemented stereospecific synthesis series *E*-mono-olefin components of reproductive insects pheromones of the order *Lepidoptera* [6*E*-nonen-1-ol and its acetate – Mediterranean fruit fly pheromones *Ceratitis capitata* and melon butterfly *Dacus cucurbitae*, as well as 11*E*-tetra-decene-1-ol and its acetoxyderivative – pheromones of fruit leaf *Archips argyrospilus* and webworm *Loxostege sticticalis* respectively] from the available product catalyzed by complex compounds of palladium, catalyzed by palladium complex of codimerization of butadiene and carbon oxide – isopryl-3*E*,8-nonadienoate – with the use at key stages of the reactions of hydride reduction of the ester derivatives, thermal hydroalumining – oxidation and cross-coupling of dialkyl lithium cuprate reagent with *para*-toluenesulfonate derivative.