

# Determination of the trail-following pheromone of *anacanthotermes turkestanicus*

Ulugbek Togaev

National University of Uzbekistan  
Department of Organic Synthesis and Applied Chemistry  
Institute of Bioorganic chemistry

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Dr. Togaev Ulugbek

## ABSTRACT

Damage by termites and the subsequent repair costs have been estimated at 22 billion worldwide annually. The control of pest insects that damage buildings or crops generally relies on insecticides, which may be toxic to plants and animals, including humans. Their frequent use generates a resistance, and prolonged application may reduce their efficacy. As a consequence, a new approach to pest control has emerged with integrated pest management. Reduction of insects by using sex pheromones is a popular technique, being usually carried out in two main ways mass trapping and mating disruption. For pest insects using trails for their communication, the trail pheromone is spread over infested areas to disrupt communication by masking authentic trails and causing colonies to perish with the loss of cooperative benefits. *Anacanthotermes turkestanicus* is a termite pest species, widespread in Uzbekistan, Tadjikistan, Caucasus, and neighboring countries. It is a serious pest in Uzbekistan on all available kinds of wood both coniferous and deciduous including manufactured wood, paper and cardboard, as well as cotton textile and other materials containing cellulose. About 40 historic monuments in Khiva and about 30,000 houses in other regions of Uzbekistan are infected with termites. The purpose of this study is to identify the chemical nature of the trail pheromone of the pest species *A. turkestanicus*. This will be the first study to provide the identification of not only such pheromones in one of the last family of termites where no information is known termites are classified in 7 families, but also their symbionts and how they function in these termites. This information will be used in pest management directly in order to control this pest species.

## BIOGRAPHICAL SKETCH



**Ulugbek Togaev** is researcher from National University of Uzbekistan at the Department of Organic Synthesis and Applied Chemistry and Institute of Bioorganic chemistry. He has got his Ph.D. in 2021 on the subject bioorganic chemistry and his research work is focusing on synthesis and investigation of the structural and functional dependence of bio-regulators on the basis of new attractants, phagostimulants, and pheromones affecting the chemical communication of insects. Especially currently he is doing project about investigation of trail-following pheromone of the termites *Anacanthotermes turkestanicus*. This investigation would be great tool to tackle against the pest insect (*Anacanthotermes turkestanicus*).