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Abstract book



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Welcome

It is our sincere pleasure to welcome you on the EurBee 10 Congress in Tallinn, Estonia! The Congress is organized by the Estonian University of Life Sciences with assistance by Publicon OÜ.

EurBee is the event, where old and new friends get together to exchange the knowledge of novel scientific findings, associated with honeybees and other pollinators.

We encourage young researchers to meet the leading scientists on their field. Establishing networking and creating new connections is extremely important for sustainable bee research.

The City of Tallinn is the capital of Estonia. Tallinn's Hanseatic old town and nowadays modern architecture is a great mixture for every taste. We recommend you to discover the great Estonian flavors and the interesting culture that Tallinn offers you in abundance on every corner.

Looking further, Estonian nature with its forests, bogs and swamps is unique in the world – all the EurBee guests have the opportunity to experience its magic!

Experience magic – experience Estonia!

Sincerely Yours,

Risto Raimets

President of EurBee 10



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DIVERSITY PATTERNS OF P450 GENES IN 17 HONEY BEE SUBSPECIES

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Abstract

Honey bees (*Apis mellifera*) inhabit a vast geographical range, spanning diverse natural and agricultural ecosystems. They are exposed to different levels and types of natural (such as plant allelochemicals) and synthetic (such as pesticides) xenobiotics within this range. Several genes have been implicated in the resistance of insects to pesticides, including the P450 monooxygenases superfamily that contains 46 genes. Here, the sequences of P450 monooxygenases from >1500 individuals representing 17 subspecies of the four honey bee main lineages will be analyzed. The functional annotation and effects of each variant will then be predicted using SnpEff and the allele frequency and FST (fixation index) of each SNP per population and evolutionary lineages will be calculated. It is expected to have highly differentiated SNPs among the different subspecies/lineages.

This work was conducted in the framework of the projects MEDIBEES - Monitoring the Mediterranean Honey Bee Subspecies and their Resilience to Climate Change for the Improvement of Sustainable Agro-Ecosystems funded by PRIMA, Better-B, funded by the European Union, the Swiss State Secretariat for Education, Research and Innovation, and UK Research and Innovation, under the UK government's Horizon Europe funding guarantee (grant number 10068544) and Bee3Pomics: Omics insights into molecular effects of plant protection products in honey bees (Apis mellifera) funded by the RESTART-FCT.