


D3524: Ovipositor transcriptomes reveal an evolutionary conserved mechanism of oviposition substrate choice in *Drosophila*

Thursday, September 29, 2016 09:00 AM - 05:00 PM

 Convention Center - West Hall C

Introduction: Proper selection of oviposition site is a fundamental animal behaviour that highly affects the survival of the progeny. In insects, females use different environmental cues, such as odorants or tastants, to choose the best possible site; the molecular bases of this key behaviour are complex, involving different chemoreceptors scattered through the insect body, and part of them remains still mostly unexplored.

Methods: In this study, we analyzed the whole-gene expression of four *Drosophila* species ovipositors, including that of *D. suzukii*, an invasive pest which oviposits on fresh rather than fermenting fruits, and three *Drosophila* species which served as successive outgroups (*D. subpulchrella*, *D. biarmipes* and *D. melanogaster*).

Results/Conclusion: We found that all species express various taste-related genes, such gustatory and ionotropic receptors, as well as odorant binding-proteins. While some genes are expressed in all the *Drosophila* species tested, others are species-specific. Overall, our results reveal a conserved mechanism of oviposition site choice in *Drosophila*, which is likely modulated in different species by the expression of species-specific receptors or binding proteins which we suggest are involved with adaptation to specific ecological niches.

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