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Risk assessment of Oropouche virus transmission by mosquitoes in Europe

Inhalt

Oropouche virus (OROV) has emerged as a significant health threat in Central and South America in 2024. Belonging to the genus Orthobunyavirus (family Peribunyaviridae), it is primarily transmitted by Culicoides midges; however, the role of mosquitoes in its transmission cycle has not been fully clarified. This study assesses the vector competence of five mosquito species (*Culex torrentium*, *Cx. pipiens* biotype *pipiens*, *Aedes aegypti*, *Ae. japonicus*, and *Ae. albopictus*) for OROV strain TR 9760 (isolated in 1955 from a febrile patient).
Performing infection via artificial bloodmeal and forced salivation assay under different temperature regimes and timepoints, no infection was detected in *Ae. aegypti* and *Ae. japonicus*, independent of timepoint or temperature regime tested. Interestingly, *Cx. pipiens* biotype *pipiens* and *Cx. torrentium* exhibited low-level susceptibility to OROV infection, but no virus was detected in their saliva, indicating they are unlikely to transmit OROV. In contrast, *Ae. albopictus* exhibited positive saliva, suggesting potential vector competence. Temperature-based risk analysis indicates that regions with established *Ae. albopictus* populations, may be at risk for OROV transmission.
These findings underscore the importance of virus surveillance and vector control in susceptible areas.

Keywords

Oropouche virus, mosquitoes, Aedes albopictus, transmission

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66

Professional Status of the Speaker

Senior Scientist

Junior Scientist Status

No, I am not a Junior Scientist.

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