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Synthesis and characterization of nitrile functionalized silver(I)-*N*-heterocyclic carbene complexes: DNA binding, cleavage studies, antibacterial properties and mosquitocidal activity against the dengue vector, *Aedes albopictus*

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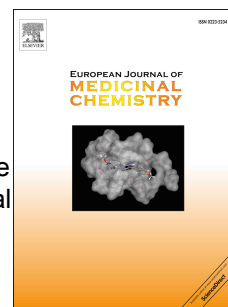
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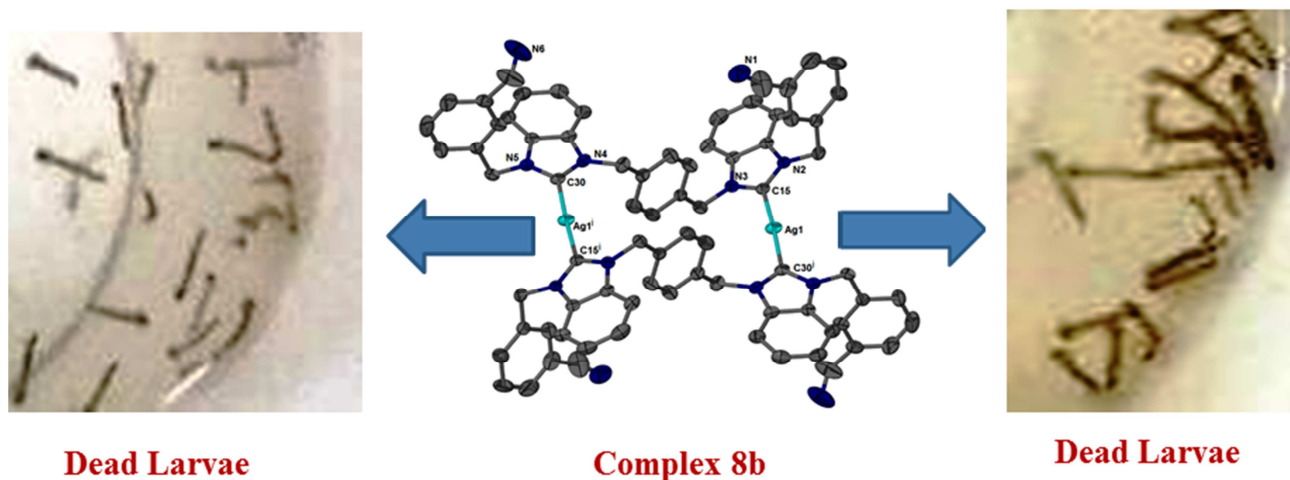
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### Graphical abstract

A new series of benzimidazolium based nitrile-functionalized Ag(I)-*N*-heterocyclic carbene complexes was developed by the deprotonation of the benzimidazolium salts and refluxing the benzimidazolium salts in the presence of a slight excess of Ag<sub>2</sub>O. The most promising lead of this series, compound **8b**, were highly larvicidal and adversely affected the development of larvae into adults at the tested concentrations.



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