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[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(65K\)\]](#) [\[References\]](#)

## Is pyridylmethyl group of imidacloprid replaceable with fluoroalkyl moiety as a hydrogen-bond acceptor?

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### Abstract:

Variable fluoroalkyl groups were introduced to 2-(*N*-nitroimino)-imidazolidine and the insecticidal potency against the green peach aphid, the tobacco cutworm and the cucurbit leaf beetle was assessed. The activity of most of the compounds was modest, except for the 3-fluoropropyl derivative showing the apparent insecticidal activity against the aphid and the leaf beetle at 100 ppm. The protrusion of the fluoropropyl derivative may be taken as the H-bond functionality of this group similar to the pyridylmethyl group of imidacloprid in the electronic and geometrical respects. However, judging from the obviously lower activity than imidacloprid, the fluoroalkyl group will not compatible with pyridylmethyl as an activator.

### Keywords:

fluorocarbon, imidacloprid, insecticidal activity, H-bonding



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