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Original article

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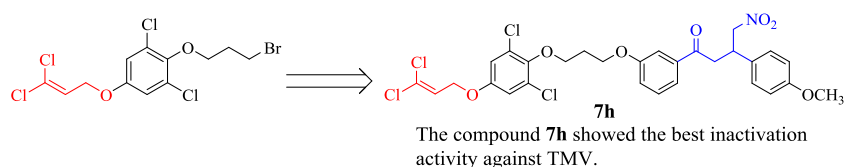
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Graphical Abstract



A series of chalcone derivatives that contain the 1,1-dichloropropene moiety was synthesized and assayed for the antiviral activity against tobacco mosaic virus. Compound **7h** showed significant inactivation activity against TMV and strong interaction with the tobacco mosaic virus coat protein.

ABSTRACT

A series of novel chalcone derivatives that contain the 1,1-dichloropropene moiety was designed and synthesized. Bioactivity assays showed that most of the target compounds exhibited moderate to good antiviral activity against tobacco mosaic virus (TMV) at 500 $\mu\text{g/mL}$. Among the target compounds, compound **7h** showed the highest in vivo inactivation activity against TMV with the EC_{50} and EC_{90} value of 45.6 and 327.5 $\mu\text{g/mL}$, respectively, which was similar to that of Ningnanmycin (46.9 and 329.4 $\mu\text{g/mL}$) and superior to that of Ribavirin (145.1 and 793.1 $\mu\text{g/mL}$). Meanwhile, the microscale thermophoresis and fluorescence spectroscopy experiments showed that the compound **7h** had a strong interaction with the tobacco mosaic virus coat protein.

Keywords:

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