Do viruses sense their vector?
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To cite this version:
Martin Drucker, Aurélie Bak, Jean Luc Macia, Stéphane Blanc. Do viruses sense their vector?. 14. Rencontres de Virologie Végétales (RVV), Jan 2013, Aussois, France. 1 p., 2013. hal-02807038

HAL Id: hal-02807038
https://hal.inrae.fr/hal-02807038
Submitted on 6 Jun 2020

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Noncirculative transmission:

... is often thought to be purely mechanical

Aphid transmission experiments using protoplasts:

Cauliflower mosaic virus
Circular ds DNA, icosahedral

Turnip mosaic virus
Linear ss RNA, filamentous

Discussion:

**YES!**

Aphid transmission of both CaMV and TuMV requires live cells → Virus acquisition is not purely mechanical

The general Ca$^{2+}$ channel blocker lanthanum inhibits transmission → Ca$^{2+}$ signaling pathways are involved in acquisition

Aluminium does not inhibit transmission → TPC1 channels are not involved in virus-vector recognition

Gadolinium inhibits transmission of TuMV and maybe CaMV → Other Ca$^{2+}$ channels are involved