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DO VIRUSES SENSE THEIR VECTOR?



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Noncirculative transmission:

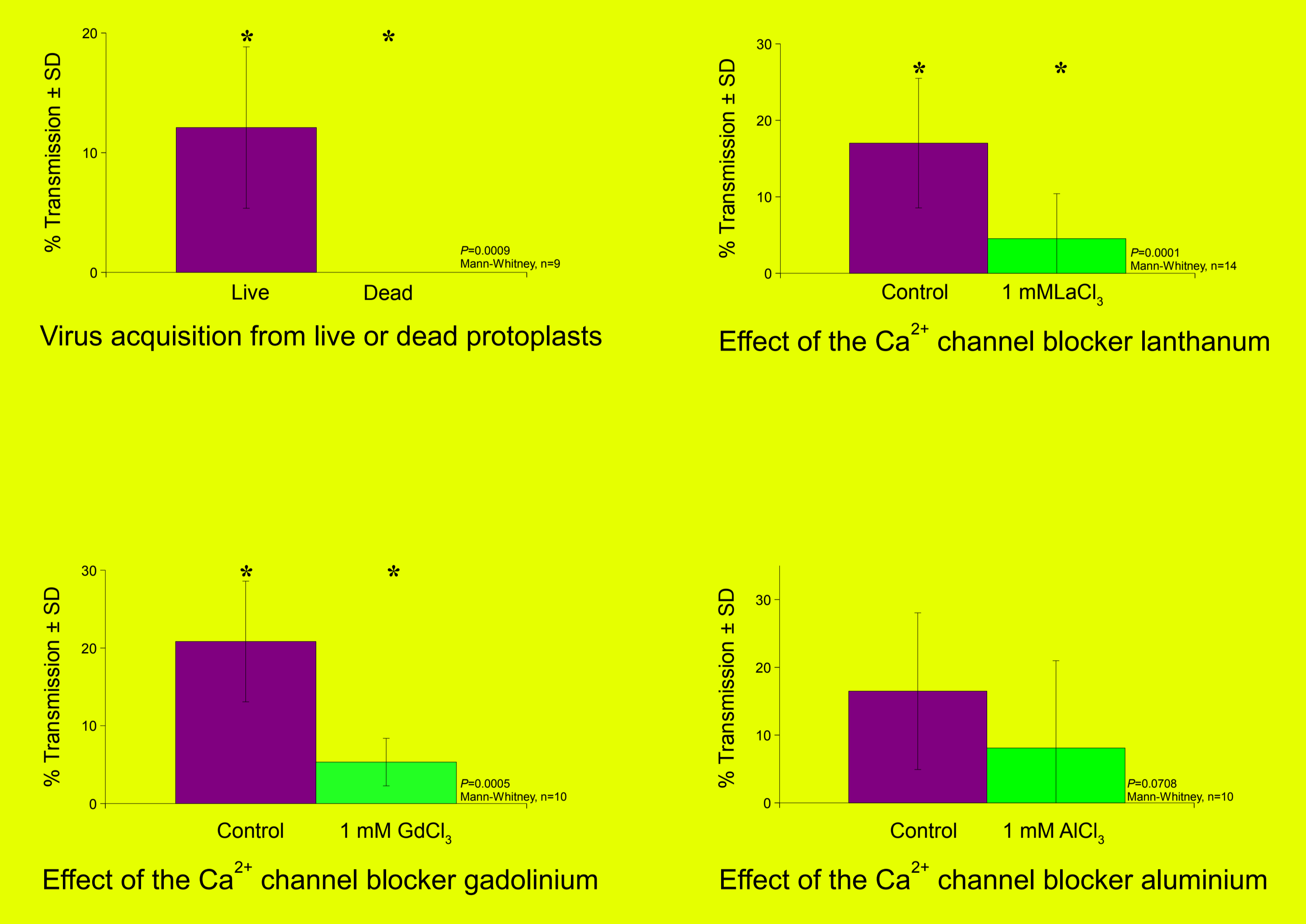
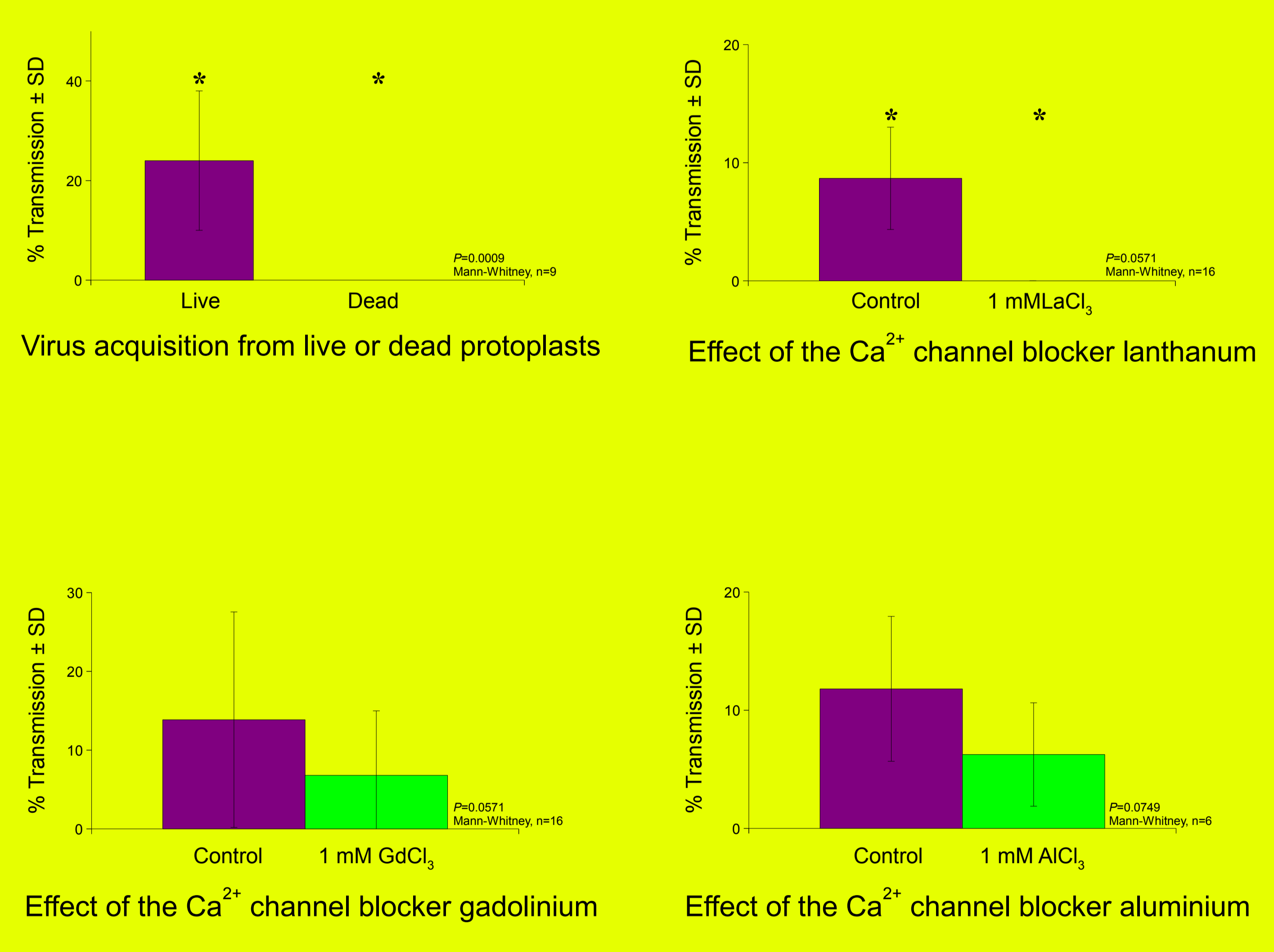


... is often thought to be purely mechanical

Aphid transmission experiments using protoplasts:

Cauliflower mosaic virus
 Circular ds DNA, icosahedral

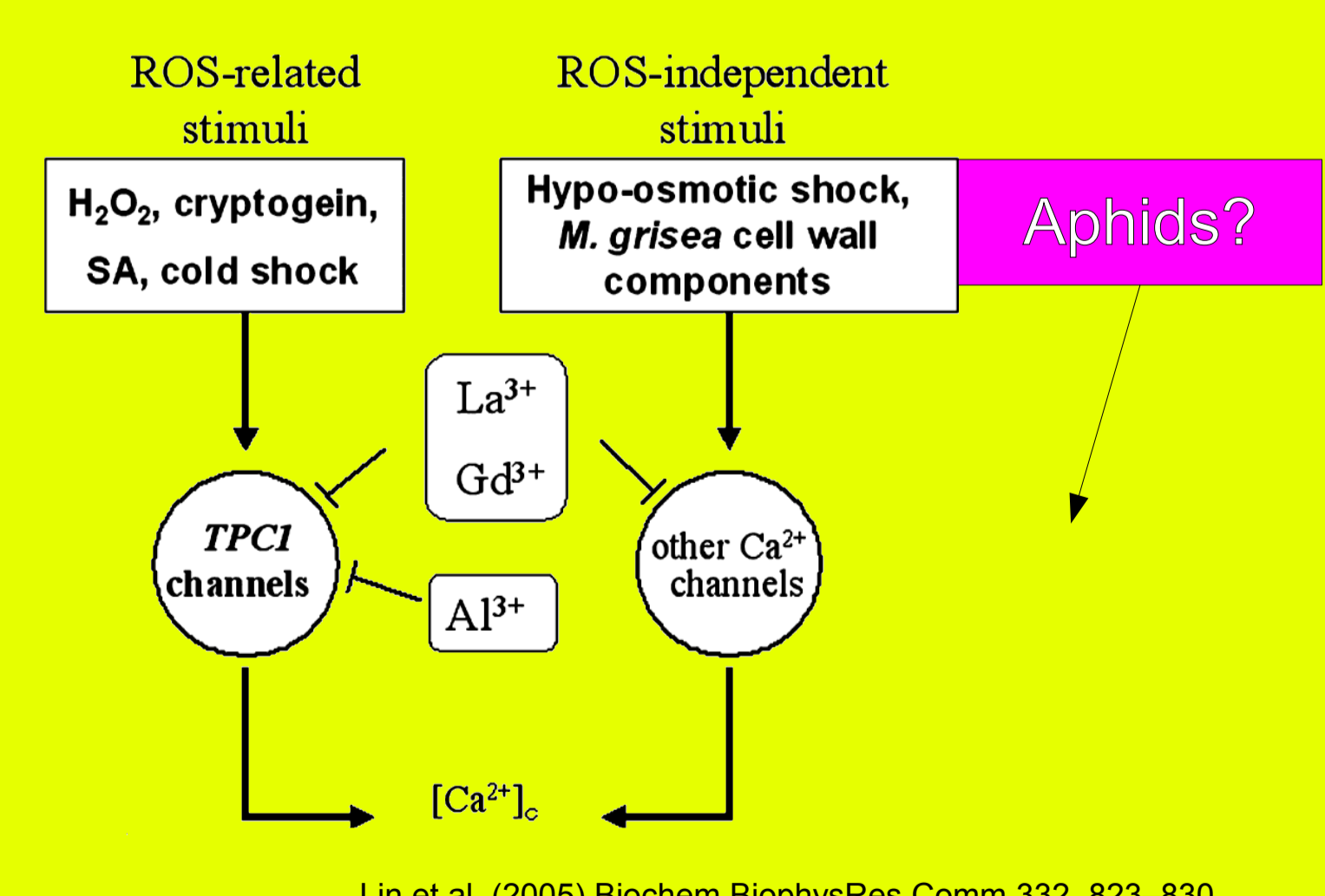
Turnip mosaic virus
 Linear ss RNA, filamentous



* Significant effect (P<0.05)

Discussion:

YES!



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

The general Ca²⁺ channel blocker lanthanum inhibits transmission → Ca²⁺ 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 Ca²⁺ channels are involved