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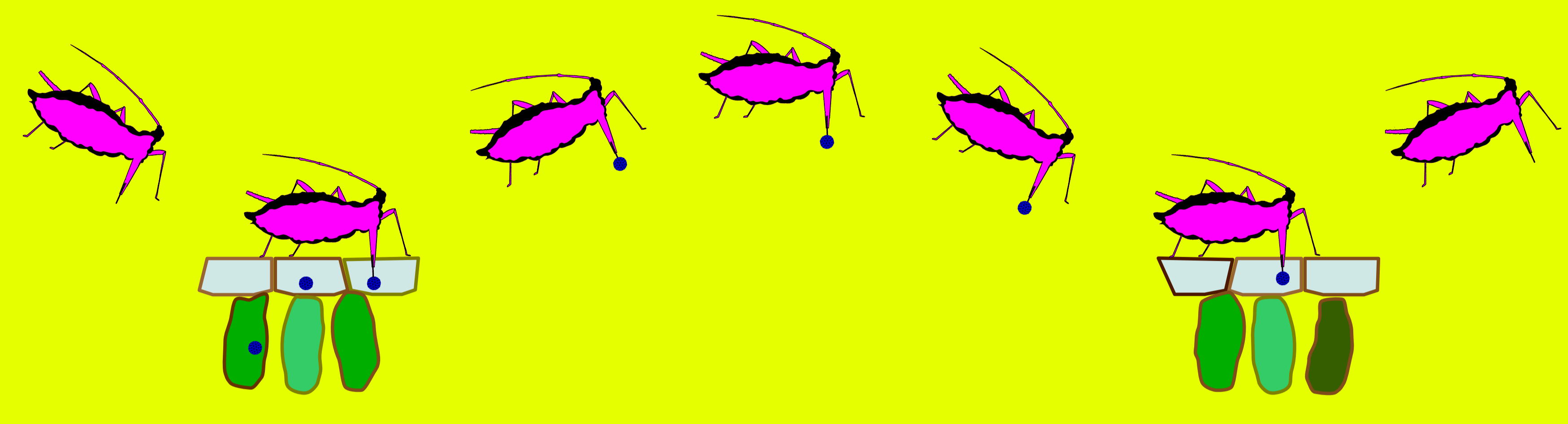
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# DO VIRUSES SENSE THEIR VECTOR?



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## Noncirculative transmission:

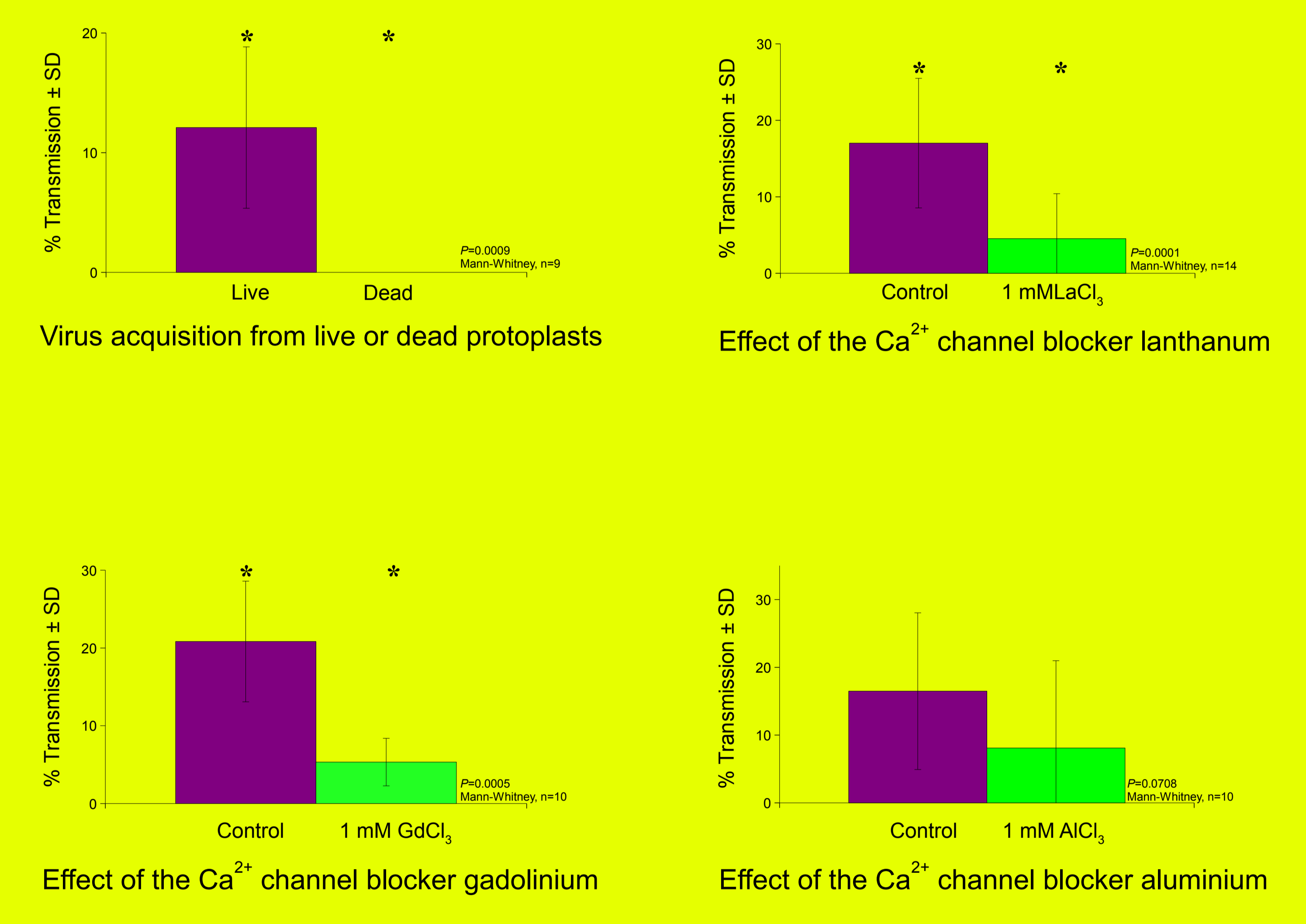
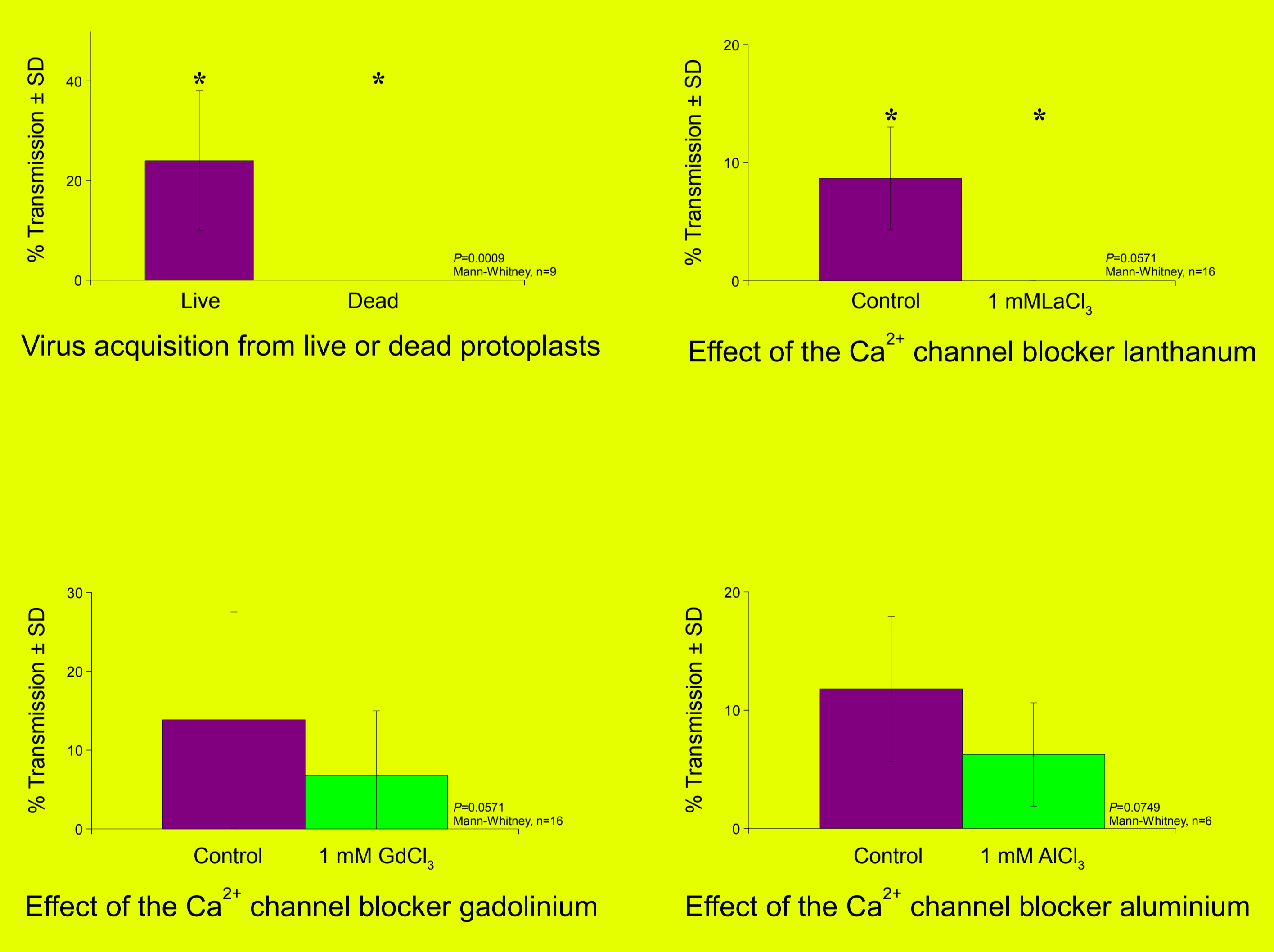


... is often thought to be purely mechanical

## Aphid transmission experiments using protoplasts:

*Cauliflower mosaic virus*  
 Circular ds DNA, icosahedral

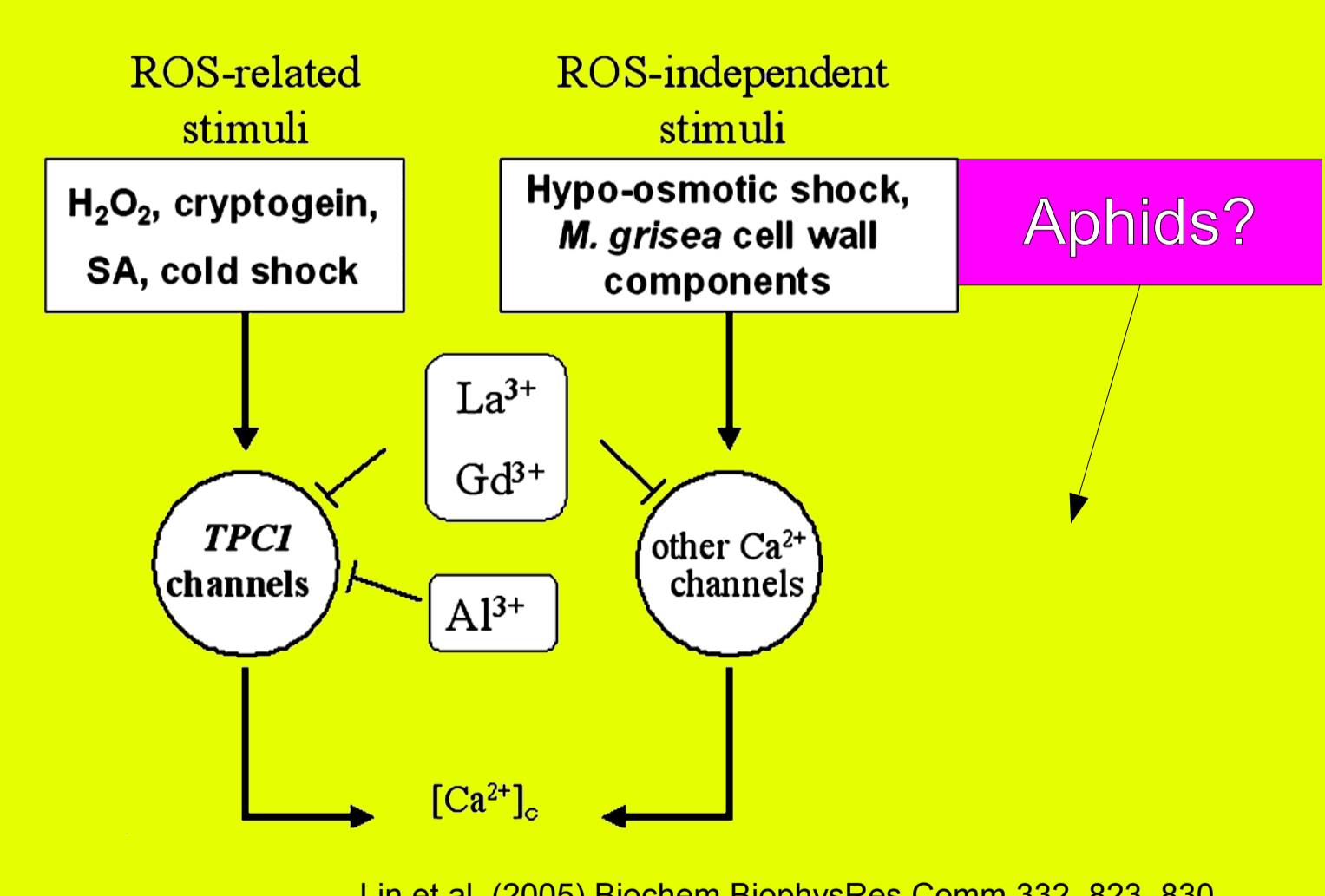
*Turnip mosaic virus*  
 Linear ss RNA, filamentous



\* 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 Ca<sup>2+</sup> channel blocker lanthanum inhibits transmission → Ca<sup>2+</sup> 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<sup>2+</sup> channels are involved