

Characterization of the Acrostyle, an organ present at the tip of aphid maxillary stylets involved in non-circulative virus transmission.

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Hundreds of plant virus species with major agricultural and economical impacts are transmitted by aphids in a non-circulative manner : they are taken up in an infected plant, retained on receptors within the insect maxillary stylets, and subsequently released for inoculation into new host plants. Highly specific interactions between viruses and their vectors are involved in this reversible attachment process. Working on aphid stylets still represents a major bottleneck to the identification of receptors, and despite considerable efforts only those from the *Cauliflower mosaic virus* were partially characterized to date. These receptors are located in a newly identified organ, the Acrostyle, present in the common canal at the extreme tip of the maxillary stylets. We showed that this organ contains cuticular proteins from the RR2 family. Its intrinsic physiological role remains totally unknown. We propose that this organ could be involved in the retention and release of other compounds, originating either from the plant or from the saliva, and thereby play a role in aphid/plant compatibility. Various approaches are currently developed to define precisely the protein composition of the acrostyle. The use of an antibodies library and a Peptide Array approach will be presented.