

Investigating the localizations and interactions of *Soil-borne wheat mosaic virus* movement protein and CP-RT protein

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Soil-borne cereal viruses cause substantial crop losses and therefore represent an extensive threat for agriculture in Europe, Asia and America. The Furovirus *Soil-borne wheat mosaic virus* (SBWMV) is transmitted by *Polymyxa graminis*, a plasmodiophorid which produces resting spores containing the virus. These virus-containing resting spores remain infectious in soil for many years. Thus, the only way to combat virus infection by *Polymyxa*-transmitted viruses is to grow virus resistant plants. However, the only known effective resistance locus against Furoviruses encodes for a translocation resistance, i.e. the virus titer is significantly reduced in the shoots of resistant

plants, while the roots still become infected. The viral factors determining virus movement from the roots to the shoots and virus transmission by *Polymyxa* are likely the viral movement protein (MP) and viral coat protein – readthrough (CP-RT) protein. To better understand the process of virus movement and virus transmission, we are investigating the subcellular localizations and host interactions of these two viral factors. We expect that a better understanding of host components, with which these two viral proteins associate during infection, will help to develop targets for novel resistance strategies.