



Seminar

Plant Pathology & Microbiology

PLP
TEXAS A&M UNIVERSITY

Wednesday

October 21, 2015

Peterson 113

4:00 PM—5:00 PM

Maria Regina Mendoza

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TEXAS A&M UNIVERSITY

Argonaute 2 Antiviral Silencing in Plants

The Scholthof laboratory studies the molecular mechanisms that determine whether a plant is susceptible or resistant to virus infection. Although there are multiple factors that influence the ability of a virus to infect a plant, crucial events are viral movement and the evasion of resistance responses, including RNA silencing or interference (RNAi). To investigate some of these aspects they use *Tomato bushy stunt virus* (TBSV) as a model system. TBSV has an RNA genome with five genes of which two (encoding for proteins designated P22 and P19) are involved in virus spread and which can also act as elicitors of resistance responses. P22 is required for cell-to-cell movement and P19 performs host-specific activities for virus transport. P19 is also a suppressor of RNAi through sequestration of short interfering RNAs (siRNAs) that are consequently unavailable to program any Argonaute (AGO) in the RNA-induced silencing complex (RISC). They are currently conducting experiments to examine the biochemical properties of P22 and P19 and to examine their interaction with host proteins. They also use P19 mutants and biochemical isolation procedures to characterize a novel virus-induced RISC-like complex from plants, and through genetic approaches aim to identify AGO proteins involved in antiviral silencing. A biotechnologically directed effort deals with exploiting virus proteins (e.g., suppressors) and replicons to increase expression of value-added foreign genes in suspension cells or whole plants.

Hosted by Dr. Herman Scholthof



Coffee & Cookies

3:45 - 4:00 Room 121