



Figure 1. The movement of plant sRNAs, and therefore RNA silencing, can occur through two distinct mechanisms. (A) sRNAs can move through channels between plant cells called plasmodesmata. The diffusion of sRNAs from the cell in which they were made is seen in the red gradient. (B) Cell-to-cell movement can be extended beyond the range of diffusion through plasmodesmata by recipient cells using the primary sRNAs to initiate successive rounds of RNAi and produce secondary sRNAs. This amplification process is called transitivity. (C) Long-range movement from one organ to another is accomplished by loading the plant vascular system with sRNAs. Cells producing sRNAs and the movement of sRNAs are depicted in red. (D) In this critical experiment that defined sRNAs as the mobile factor in RNA silencing, a wild-type top of plant (scion) was grafted to a *dicer mutant* root, which is incapable of producing siRNAs. SiRNAs generated in the scion were transported into the root where they were identified by deep sequencing, and where they functioned in RNA cleavage and RNA-directed DNA methylation.