Abstract

RNA interference (RNAi) play a key role in various biological processes including regulation of gens and transposons, phylogenetic of part plant body, stress response, chromatin remodeling and antiviral mechanism. The ground of RNAi is short RNA molecules (small RNA, sRNA). In plants they are produced in range from 21 to 24 nucleotides (nt) and on the basis of being complementary they recognize target molecule of RNAi. It is possible to divide small RNA in two basic classes: microRNAs (miRNA) and small interfering RNAs (siRNA). To product and put small RNA into activate needs proteins from several gene family. DICER-LIKE (DCL) proteins create small RNAs from double-strand RNA precursors, which are often created by RNA dependent RNA polymerase (RDR) activity. With these small RNAs interact ARGONAUTE (AGO) proteins and together create RNA-Induced Silencing Complex (RISC). Those complexes play a key role in recognizing target molecule in active phase of RNAi. Structure and biogenesis of sRNAs has decisive influence on RISC complex and its next way in biogenesis. RNAi cause effect on post-transcriptional level (PTGS), as degradation of target molecule or repression of translation. And on transcriptional level (TGS) as sRNA intermediate histone and DNA methylation.