



Figure 3. Organization of heterochromatic chromosome regions in *S. pombe* and *A. thaliana*. (A) The centromere of *S. pombe* chromosome 1 is shown as an example (top line), seen in the context of the whole chromosome below. The centromere core (orange) consists of the unique central core (*cnt1*) region flanked by innermost (*imrL* and *imrR*) and outermost (*otrL* and *otrR*) repeats. The pericentric *otr* region (green) is transcribed in both directions, giving rise to forward (blue) and reverse (red) transcripts. *A. thaliana* centromeres illustrated below are composed of 180-bp repeats (orange) interspersed with retrotransposable elements (yellow). Forward transcripts initiating within the long terminal repeat (LTR) of the retroelement and reverse transcripts initiating within the 180-bp repeats are indicated. (B) The region between the *mat2* and *mat3* genes contains a domain that is homologous to the centromeric repeats (*cenH*) and is also bidirectionally transcribed. Atf1 and Pcr1 are DNA-binding proteins that act in parallel with RNAi in mating-type silencing.