



Figure 5. Progressive chromosome-wide heterochromatinization induced by *Xist* RNA. (A) When the *Xist* gene is expressed, the RNA binds to and coats the X chromosome from which it is transcribed (green dashed line). *Xist* RNA is thought to trigger silencing of the chromosome by recruiting chromatin modifying activities (red and yellow circles). The initial wave of silencing, in turn, leads to recruitment of additional layers of epigenetic modification (white circles), further stabilizing the heterochromatic structure. Establishment of these different levels of epigenetic silencing is achieved in a stepwise manner through development and ontogeny. (B) Localization of *Xist* RNA along the X chromosomes is shown by in situ hybridization in both interphase and metaphase.