



Figure 3. Progressive Chromosome-wide Heterochromatinization Induced by *Xist* RNA

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 (*gray circles*), further stabilizing the heterochromatic structure. Establishment of these different levels of epigenetic silencing is achieved in a stepwise manner through development and ontogeny. Localization of *Xist* RNA along the X chromosomes is shown by in situ hybridization in both interphase and metaphase.