



**Figure 4.** The cycle of X inactivation and reactivation. The X chromosome undergoes a cycle of X inactivation and X reactivation during development. Red arrows indicate X inactivation steps and green arrows indicate X reactivation steps. Inactivation first occurs in early preimplantation embryos (imprinted X inactivation) and subsequently in cells of the epiblast at the time of gastrulation (random X inactivation). The inactive X is reactivated in ICM cells when they are first allocated at the blastocyst stage, and also in the developing germ cells.