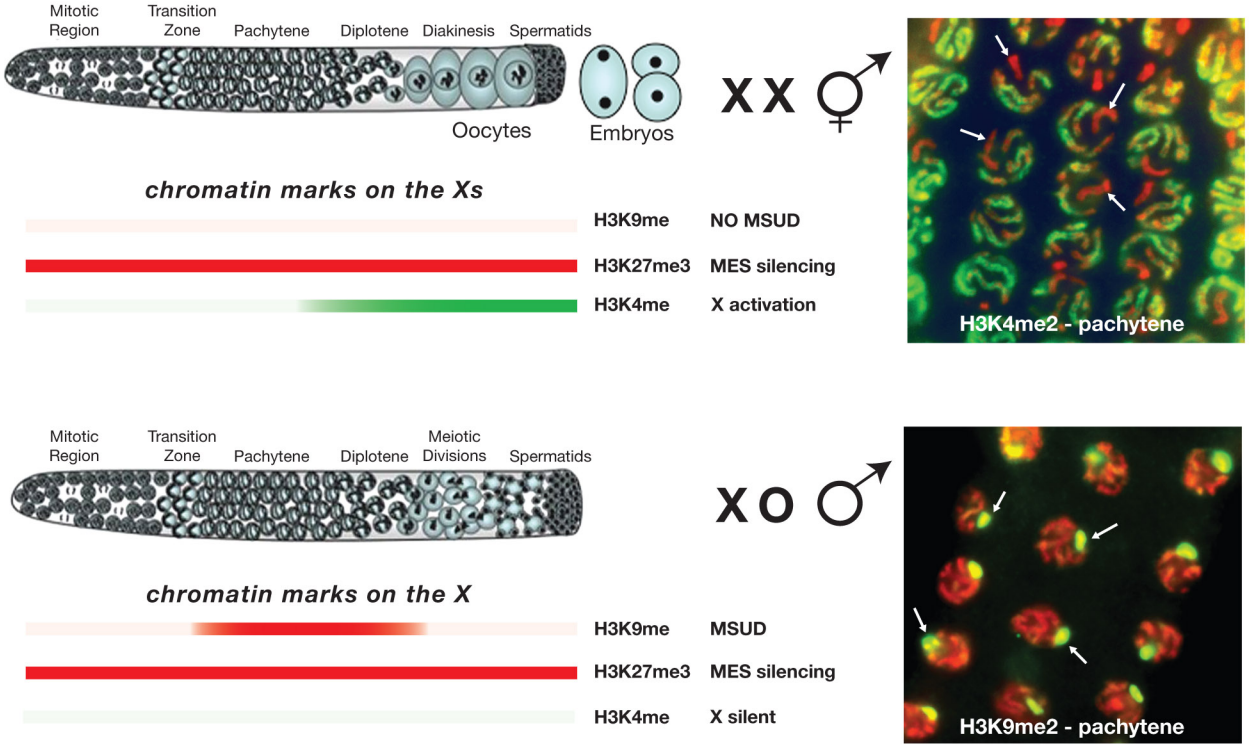

Figure 7. Epigenetic Regulation of the X Chromosomes during Germ-cell Development

In both sexes, germ cells progress through mitosis (*left*), enter meiosis in the transition zone, and progress through meiosis I prophase. Cells destined to form sperm in both sexes complete the meiotic divisions in the gonad. In hermaphrodites, cells destined to form oocytes progress through meiotic prophase in the gonad and complete the meiotic divisions after ovulation and fertilization. The presence of various histone modifications on the X chromosome(s) in germ cells is shown by red (for repressive modifications) and green bars (for activating modifications). As shown in the panels on the right, antibodies to particular histone modifications reveal that the X chromosomes in germ nuclei are marked differently from the autosomes and are silenced. H3K4me2 (*green*), a mark of actively expressed chromatin, is excluded from the Xs in XX pachytene nuclei. H3K9me2 (*green*), a mark of heterochromatin, is concentrated on the X in XO pachytene nuclei. DNA is stained red. Arrows indicate representative X chromosomes in each image.