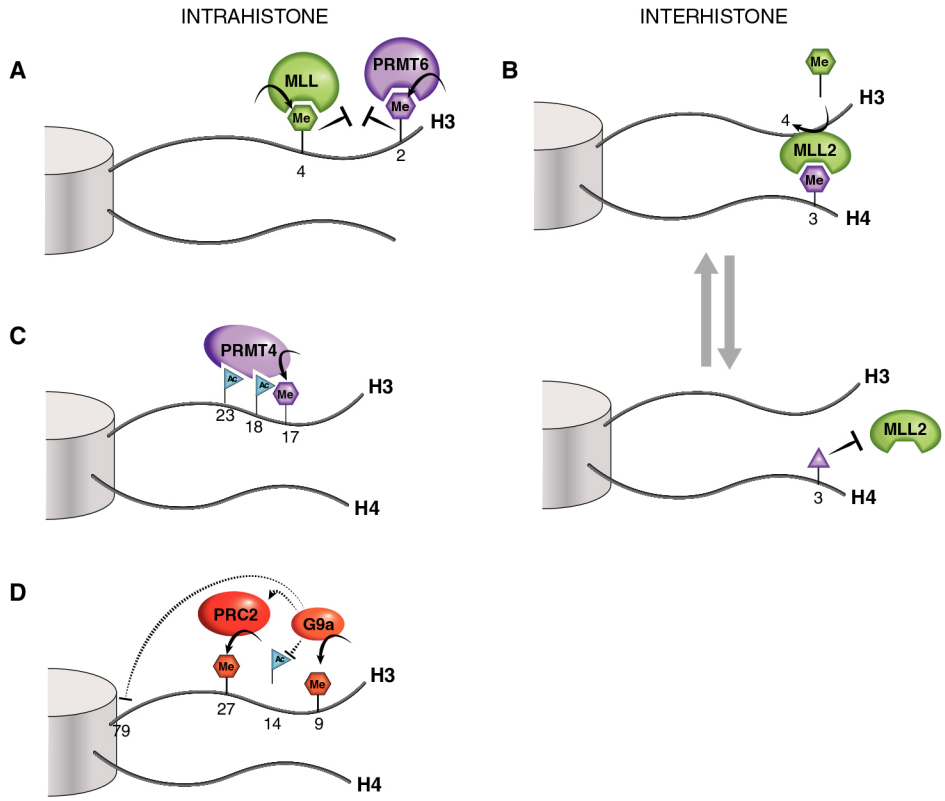

Figure 3. Histone tail cross talk. (*A*) H3R2me2a and H3K4 methylation are examples of mutually exclusive intrahistone H3 PTMs. (*B*) An example of an interhistone cross talk is when H4R3me0 or H4R3me2a marks (purple hexagon) are converted into H4R3me2s (purple triangle), which is thought to block the binding of MLL2 via its PHD4-6 domain, thus preventing the methyltransferase activity of MLL2 at H3K4. (*C*) PRMT4, a histone arginine methyltransferase, is thought to partially rely on H3 acetylation at K18 and K23 for recruitment to H3 and subsequent dimethylation of the nearby R17 residue. (*D*) An illustration of the increasingly complex picture of histone H3 tail cross talk, involving H3K9, H3K27, and H3K79 methylation and H3K14 acetylation. See text for a more detailed explanation.