



Figure 3. Features of the *Agouti viable yellow* allele. (A) The *Agouti viable yellow* allele (not to scale) has an intracisternal A particle (IAP) insertion (striped box) in pseudoexon 1a (gray box), ~100 kb upstream of the *Agouti* coding exons (black). IAP long terminal repeats (LTRs) are shown as arrowheads, and transcriptional start sites shown as arrows. (B) An *agouti* wild-type mouse with an A^+ allele has a brown coat color phenotype with a two-toned hair shaft, in which the base appears black in color, and closer to the tip shows a yellow color (see cartoon in C). This phenotype occurs because the *Agouti* gene, producing a yellow fur color, is only transiently expressed in the hair follicle microenvironment. The A^{vy} allele, if expressed ubiquitously from the IAP promoter, produces a phenotype of an entirely yellow hair shaft. There is a spectrum of coat color phenotypes observed, however, because of the A^{vy} allele ranging from completely yellow when the IAP LTR is active in all cells, to mottled due to patches of active and inactive cells, and finally animals with an *agouti* colored coat, called pseudoagouti, which are indistinguishable from wild-type *agouti* animals because of silenced IAP LTR in all cells. (Reproduced from Morgan et al. 1999.) (C) Mice with the *Agouti viable yellow* allele in a euchromatic state in all cells appear yellow, whereas those with the allele in a heterochromatic state in all cells appear *agouti* in color, termed pseudoagouti. Mice that are mosaic for the heterochromatic and euchromatic allele appear mottled. (D) Summary of the epigenetic marks found at an active or inactive *Agouti viable yellow* allele. The inactive allele is hypermethylated and enriched for H4K20 trimethylation. The active allele is hypomethylated and enriched for acetylated residues of histone H3 and H4 tails.