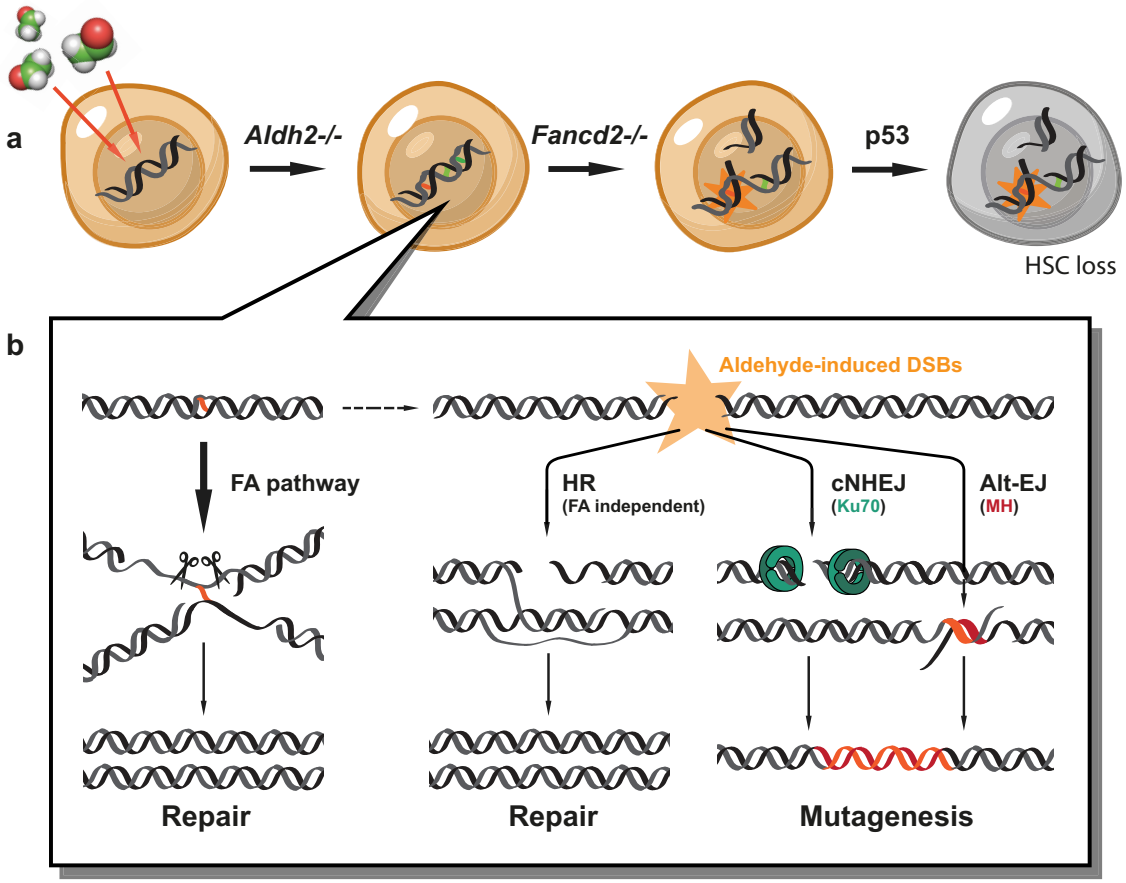

Extended Data Figure 11 | Mechanisms to maintain genetic integrity and suppress mutagenesis by endogenous aldehydes in HSCs. **a**, Aldehyde catabolism and Fanconi anaemia (FA)-pathway-mediated DNA repair constitute two distinct tiers of protection against aldehyde damage. Loss of this protection leads to the accumulation of DNA damage and mutagenesis. Passage of mutated genetic information is prevented by the activation of p53, leading to HSC loss. **b**, In the absence of a functional Fanconi anaemia pathway, aldehyde lesions degenerate into DNA DSBs that can be repaired through error-free recombination. However, this mechanism is not sufficient to fully compensate for Fanconi anaemia inactivation, leading to the engagement of both classical and alternative end-joining, and subsequent mutagenic repair.