



**Figure 35.** Epigenetic response to environmental signals and metabolism. Environmental conditions, such as physiological signals or pathological stress, are known to influence the epigenome. This is largely mediated via the availability of cofactors that are essential for the activity of chromatin-modifying enzymes. The distinct classes of relevant enzymes and their cofactors are illustrated: KMTs/DNMTs require *S*-adenosylmethionine (SAM); HATs require acetyl-coenzyme A (acetyl-CoA); sirtuins require nicotinamide adenine dinucleotide (NAD); kinases require ATP; KDMs require  $\alpha$ -ketoglutarate ( $\alpha$ -KG) or Flavin adenine dinucleotide (FAD). (Adapted from Fodor et al. 2010.)