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Abbreviations: DMRs, differentially methylated regions; **FA,** folic acid; **FAD,** folic acid supplementation diet; **GO,** gene ontology; **Hcy,** homocysteine; **HFD,** high fat diet; **IL-6,** interleukin-6; **KEGG,** Kyoto Encyclopedia of Genes and Genomes; **MeDIP-seq,** methylated DNA immunoprecipitation sequencing; **ND,** normal diet; **RT-qPCR,** real-time quantitative PCR; **TNF-α,** tumor necrosis factor α; **WAT,** white adipose tissue;

Keywords: DNA methylation; Folic acid; High fat diet; Insulin resistance; Obesity