博士論文（要約）

Phospho-JMJD1A-dependent SWI/SNF Complex Regulates Energy Expenditure in Brown Adipocytes

（ヒストン修飾酵素JMJD1AとSWI/SNF複合体による熱産生遺伝子の発現機構に関する研究）

ロズキ ロイハン

Abstract

JMJD1A has been identified to be phosphorylated at serine 265A by PKA. Its phosphorylation results in JMJD1A forms a complex with SWI/SNF and PPARγ. Although it has been reported that JMJD1A binding to PPRE target sites was induced by isoproterenol stimulation, whether phospho-JMJD1A-SWI/SNF-PPARγ facilitates JMJD1A binding to target sites is remain unknown. ChIP-seq and microarray analyses identified JMJD1A localization is increased under isoprotenol stimulation. Phospho-S265-JMJD1A and SWI/SNF complex are crucial for isoproterenol-dependent genes, *Adrb1* and *Ucp1*. Further ChIP-seq analyses of SWI/SNF subunits and PPARγ showed co-localization on ISO-induced JMJD1A target sites. Phospho-JMJD1A-SWI/SNF-PPARγ also facilitates gene transcription activation through chromatin remodeling. Taken together, I have revealed that ISO-induced JMJD1A localization is mediated by phospho-JMJD1A-SWI/SNF-PPARγ complex.