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Important biological roles of a protein lysine methyltransferase SMYD3 (SET and MYND domain-containing protein 3), for which we have been developing small molecule inhibitors, were reported by collaboration between Prof. Yusuke Nakamura's group in The University of Chicago and our research development group in OncoTharapy Science (OTS). This methyltransferase is known to be transactivated in various types of human cancer and play a critical role in the growth of cancer cells. In this study, the collaborative group discovered that SMYD3 methylates a cytosolic serine/threonine kinase AKT1 (v-Akt Murine Thymoma Viral Oncogene Homolog 1) and that the methylation is essential for AKT1 activation. AKT1 is known to be overexpressed in various types of cancer and has a central role in human tumorigenesis. Hence, SMYD3-mediated AKT1 methylation can be a good target for development of a novel class of anti-cancer therapy.

Our OTS group participated in this study and conducted structural analysis on the effects of the methylation of AKT1. We will accelerate the development of drugs targeting SMYD3 to contribute to the improvement of cancer treatment.
The paper was published online in the journal *Oncotarget*.
(http://www.impactjournals.com/oncotarget/index.php?journal=oncotarget&page=article&op=view&path[]=11898&path%5B%5D=37671)