OncoTherapy Science, Inc.
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Publication of a paper on the development of small molecule compounds inhibiting a novel anti-cancer drug target

A manuscript entitled "Development of novel SUV39H2 inhibitors that exhibit growth suppressive effects in mouse xenograft models and regulate the phosphorylation of H2AX" has been published in Oncotarget in collaboration with the group of Dr. Yusuke Nakamura, former Professor of The University of Chicago (Director of Cancer Precision Medicine Center, Japanese Foundation for Cancer Research).

Professor Yusuke Nakamura's group previously reported that the protein methyltransferase SUV39H2 (Suppressor of variegation 3-9 homolog 2), which is highly expressed in many types of human cancer including breast and lung cancers, should be a promising molecular target for the development of novel anti-cancer drugs.

The manuscript describes the development of small molecule compounds that strongly inhibit SUV39H2 methyltransferase activity. The compounds suppressed the growth of human breast and lung cancer cells and exhibited significant tumor growth suppression of human breast and lung cancers in mouse xenograft models.

Previous studies by Professor Nakamura's group have also shown that SUV39H2 plays a critical role in increasing resistance to DNA-damaging chemotherapy and radiotherapy in cancer cells. In the present study, an existing DNA-damaging anti-cancer agent doxorubicin exhibited significantly higher growth suppressive effects when combined with our SUV39H2 inhibitors than single agent treatment, both in cultured cells and in mouse xenograft models.

These results demonstrate the therapeutic potential of SUV39H2 inhibitors for the treatment of various human cancers. OTS will further accelerate the development of drugs targeting this enzyme and contribute to the improvement of cancer treatment.

For details of the manuscript, please refer to the following Web page of the journal Oncotarget (https://doi.org/10.18632/oncotarget.25806).