Research Report

Acute myeloid leukemia (AML) is a devastating cancer with a 5-year survival rate of only 26%. New treatment approaches are needed. Recently, sequencing of AML samples identified somatic mutation of the *DNA methyltransferase 3A* gene (i.e. $DNMT3A_{Mut}$) in >20-30% of AML patients, making it one of the top three most frequently mutated genes in this cancer. However, the contribution of recurrent $DNMT3A_{Mut}$ to AML development remains unclear.

Through establishment and characterization of an AML cell model with $DNMT3A_{Mut}$, we recently showed that $DNMT3A_{Mut}$ aberrantly interferes with crucial cell process by which the genetic information (DNA) is interpreted in those affected cells. We further found these AML cells bearing $DNMT3A_{Mut}$ to be hypersensitive to inhibitors of a protein called BRD4.

As the outcomes of these works, our research allowed a deeper understanding of how a common genetic mutation (i.e. $DNMT3A_{Mut}$) contributes to progression of a deadly human cancer and has helped to rationally develop novel strategies to treat the affected patients.

We have attached a publication below with this research report of WES award.