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## Development of reproducible and versatile recombinant antibodies for epigenetics research

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Epigenetics research significantly relies on antibody-dependent experiments and researchers can ruin a significant amount of budget and time due to insufficient quality and reproducibility of antibodies. To ensure future sustainability and minimal lot-to-lot variation, we applied a recombinant antibody approach to convert mouse and rabbit monoclonal antibodies into a synthetic framework, allowing facile cloning of CDR diversity regions into a standard mouse or rabbit IgG backbone and expressed them in HEK293 cells. We also introduced flexible functional tags including the Sortase tag on the C-terminus of the heavy chains to allow uniform, enzymatic conjugation to various materials in combination with a hyperactive pentamutant sortase (Sortase A5). We present demonstration of conjugation for fluorescent applications, Western blotting, ChIP and ELISA applications. We observed that recombinant antibodies give dramatically improved reactivity and specificity in ELISA assays. We also proposed extended applications of these recombinant antibodies.

### Biography

Masato Yonezawa has nearly 20 years of experience in epigenetics research in academia and industries. He has completed his PhD from Waseda University, Tokyo, Japan and worked as a Postdoctoral Fellow at Research Institute of Molecular Pathology (IMP), Vienna, Austria. He is currently working at Active Motif Inc. CA, USA.

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