

Requests for Collaboration

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<p>Research Interests</p> <ul style="list-style-type: none"> ● Antibody engineering ● Cancer immunotherapy ● Antigen-antibody interaction 	
<p>Creative Achievements in The Application of New and Existing Science and Technology</p> <p>We focus on development of engineered antibodies, such as bispecific antibodies (BsAbs) and antibody fusion proteins, for addressing unmet medical needs. We have developed a novel method for constructing a BsAb based on the hetero-association of Lin-2 and Lin-7 (L27) domains. For example, we produced a BsAb that was heterotetramerized through L27 domains and that targeted both epidermal growth factor receptor (EGFR) and CD16. The BsAb showed cytotoxic activity against EGFR-positive cancer cells by using CD16-positive lymphocytes as effector cells, and its cytotoxicity was comparable to that of a commercial therapeutic antibody. Our method has high potential for the cost-efficient production of highly active therapeutic antibodies. We now try to construct more complex and highly active antibodies by using our method.</p>	
<p>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</p> <ul style="list-style-type: none"> ● Target discovery for cancer immunotherapy ● Pharmacokinetics and pharmacodynamics (PK/PD) ● <i>In vivo</i> imaging 	
<p>A List of 5 Key Publications</p> <ul style="list-style-type: none"> • Affinity maturation of humanized anti-epidermal growth factor receptor antibody using a modified phage-based open sandwich selection method, H. Sanada, K. Kobayashi, T. Maru, <u>T. Nakanishi</u>, M. Umetsu, R. Asano, and I. Kumagai, <i>Sci. Rep.</i>, 8, 5414 (2018). • Soluble expression in <i>Escherichia coli</i> of a single-domain antibody-tumor necrosis factor α fusion protein specific for epidermal growth factor receptor, T. Osaki, <u>T. Nakanishi</u>, M. Aoki, T. Omizu, D. Nishiura, and M. Kitamura, <i>Monoclon. Antib. Immunodiagn. Immunother.</i>, 37, 20-25 (2018). • Generation and characterization of rat monoclonal antibodies against epidermal growth factor receptor, T. Osaki, C.X. Wang, T. Tachibana, M. Azuma, M. Kitamura, and <u>T. Nakanishi</u>, <i>Monoclon. Antib. Immunodiagn. Immunother.</i>, 34, 418-422 (2015). • Development of a bispecific antibody tetramerized through hetero-associating peptides, T. Osaki, S. Fujisawa, M. Kitaguchi, M. Kitamura, and <u>T. Nakanishi</u>, <i>FEBS J.</i>, 282, 4389-4401 (2015). • Development of an affinity-matured humanized anti-epidermal growth factor receptor antibody for cancer immunotherapy, <u>T. Nakanishi</u>, T. Maru, K. Tahara, H. Sanada, M. Umetsu, R. Asano, and I. Kumagai, <i>Protein Eng. Des. Sel.</i>, 26, 113-122 (2013). 	