

## S05-8 Development of platform technique for drug discovery using molecular display technologies

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Techniques for immobilizing proteins on surface of virus or microorganisms, namely molecular display technologies, have played important roles in helping the elucidation of protein–protein interactions in cells and to develop research on drug discovery. Phage display system is well-established and sophisticated; consequently, bioactive low-molecular-weight ligands and proteins significant in pharmaceutical industry have been found. In addition to the development of novel functional proteins by phage display using results from experiments in genomics and proteomics, ribosome display or yeast display systems have been developed as complementary methods. We can select the appropriate method on the basis of the objective. Molecular display using yeast has advantages in production of desired proteins from combinatorial library by flow cytometry. Firstly, principle, development procedure, and latest research in this field are introduced. Thereafter, we present results of molecular display using yeast for living cell vaccines and antibodies. Furthermore, display of receptor coupled with intracellular signal transduction—a novel type of molecular display on yeast cell surface—has been created in recent years. The role and potential of molecular display technologies employing yeast cells in drug discovery are discussed.