S05-4 **Beyond Antibodies: Generation of Conformationally Constrained Peptides for Molecular-Targeting Therapy**

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At present, antibodies are indisputably the most successful reagents in molecular targeting therapy. However, use of antibodies has been limited due to the biophysical properties and the cost to manufacture. To enable new applications where antibodies show some limitations, we have developed an alternative-binding molecule with non-immunoglobulin domain, which is called “micro-antibody”. The micro-antibody is a helix-loop-helix peptide, which is stable against natural enzymes in vivo and is small size to be non-immunogenic. The peptide is composed of three structural regions, N-terminal α-helix, C-terminal α-helix, and flexible connecting loop. In both helical regions, uncharged leucine residues were incorporated into the heptad repeat positions to dimerize the α-helices by hydrophobic interactions. Since the peptide folds by virtue of the interactions between the amino acid residues positioned inside the helix-loop-helix, the solvent-exposed, outside residues were randomized to give a library of micro-antibodies. In this symposium, the construction of the phage-displayed library and the screening of micro-antibodies binding to cytokine receptors will be discussed.