Helix-loop-helix peptide NKG2A inhibitor

Concept:

- We identify injectable helix-loop-helix NKG2A inhibitor as an immune checkpoint inhibitor of the next generation.
- Such peptide can be alternatives to anti-NKG2A antibody drugs and is expected to be more easily used beyond antibody-treated segments.

Research history:

Preparation of phagedisplayed random peptide libraries and establishment of biopanning screening system Screening of the libraries and Identification of primary hit peptides by the biopanning

Cloning, sequence analysis, preparation and evaluation of Trxfusion peptide Initial affinity maturation with phage and yeast surfacedisplayed secondary libraries

Cloning, sequence analysis, preparation and evaluation of Trx-fusion

Present status and future scope:

- 1. We started a new program for identification of helix-loop-helix peptides (HLHPs) that bind to NKG2A, one of immune checkpoints of the next generation, from phage libraries and yeast display libraries by a biopanning method and a flow cytometric screening system, respectively.
- 2. HLHP clones that bind to NKG2A with K_D values of less than 1 μ mol/L have been identified, and the best value is 38 nmol/L.
- 3. We are seeking for a collaborative research partner that would conduct *in-vitro* functional assay, *in-vivo* efficacy assessment and so on.