

Claims

- [Claim 1] Improved immuno-PCR method by using cDNA display comprising the steps of:
immobilizing, to a solid phase, a first antibody capable of binding to a target molecule:
contacting a sample fluid to the first antibody so that the first antibody can bind to the target molecule in said sample fluid.
contacting said target molecule to a cDNA display molecule;
wherein the cDNA display molecule comprises:
a nucleic acid being composed of 1) a backbone which is a double strand comprising mRNA and its complementary DNA (cDNA) and 2) a side chain strand having a polypeptide conjugation site, and
a polypeptide encoded by the cDNA,
wherein the side chain strand is a single-stranded DNA and is bound to the cDNA which forms a double-strand with the mRNA,
wherein the polypeptide is bound to the side chain strand at the polypeptide conjugation site, and has activity to bind to the target molecule; and
conducting polymerase chain reaction to amplify and detect said DNA quantitatively.
- [Claim 2] The improved immuno-PCR method by using cDNA display according to claim 1, wherein the first antibody is bound to the solid phase directly.
- [Claim 3] The improved immuno-PCR method by using cDNA display according to claim 1, wherein the first antibody is bound to the solid phase via biotin-streptavidin interaction.
- [Claim 4] The improved immuno-PCR method by using cDNA display according to any one of claims 1 to 3, wherein the first antibody is any one selected from the group consisting of IgG, a fragment thereof, a single domain antibody, and an aptamer that binds to an epitope of the target molecule.
- [Claim 5] The improved immuno-PCR method by using cDNA according to any one of claims 1 to 4, wherein the peptide is any one selected from the group consisting of a single chain variable fragment of IgG, a single domain antibody, and a peptide aptamer that binds to a different epitope of the target molecule from the first antibody.
- [Claim 6] The improved immuno-PCR method by using cDNA display according to any one of

claims 1 to 5, wherein the polypeptide conjugation site is composed of any one selected from the group consisting of puromycin and derivative thereof.