

Fipronil Specific Binding Peptide Screening through Phage Display Technique

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Fipronil is one of the phenylpyrazole chemical family insecticide, widely used for agriculture. In 2017, egg contamination scandal was occurred in Europe and South Korea. One of the main reasons was fipronil. In that case, fipronil specifically binding ligands are strongly required for development fipronil detecting sensor. In this work, we obtained fipronil-specific binding peptides through the phage display. The main immobilization strategy was using maleic anhydride activated polystyrene plates. Maleic anhydrides combined with fipronil with forming amide bond. After the immobilization, we did three rounds of biopanning and select 24 candidates from 2nd round elute plate, and 48 candidates from 3rd round elute plate. We used enzyme-linked immunosorbent assay (ELISA) to figure out the binding affinity of peptides. As a result, we can estimate the binding affinity of peptide. Finally, we choose the peptide which shows highest absorbance value.