

Immobilization Free GO-SELEX for Developing Small Molecule Binding Aptamer

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Graphene Oxide (GO) has the ability to separate free short ssDNA in heterogeneous solution. This feature can be applied as a label free platform for the screening of aptamers that bind to its target with high affinity and specificity. Screening of single strand DNA aptamers using GO (graphene oxide) which called GO-SELEX have recently drawn much attention because it makes SELEX immobilization-free. In this study, through GO-SELEX we succeeded to screen aptamers for a small molecule. In spite of distinctive advantages of GO-SELEX, there are almost only few reports to screening aptamers for small molecules with GO. Molecular weight of this small molecule target is 89.09 g/mol, and its structure formula is C₃H₇NO₂. With GO, we could screen aptamers for this small molecule target within only five rounds.