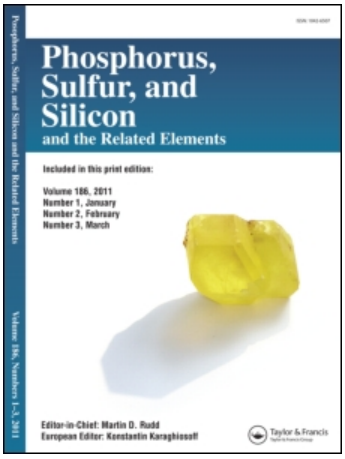


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# A Novel Approach to Selection of Functional Proteins In Vitro

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# A NOVEL APPROACH TO SELECTION OF FUNCTIONAL PROTEINS IN VITRO

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In the present study, we exploited this strong binding to develop a novel coupling method that links genotype with phenotype for selection of functional proteins from pools of random sequences of amino acids. In order to strengthen the original RNA-protein interaction still further, we connected three units of the aptamer in tandem and three units of a peptide derived from Tat that interacted with the aptamer. The binding of the resultant RNA, which consisted of three units of the aptamer, with the resultant peptide, which consisted of three units of the peptide, was extremely strong. This strong interaction was used for the selection

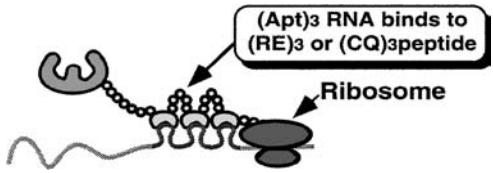


**FIGURE 1**

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of functional proteins, namely dihydrofolate reductase (DHFR) or streptavidin, which we chose as an example. We report here the successful selection, although to a limited extent, of the target protein. The noncovalent but strong interaction described above should be useful as a novel tool for the future selection of functional proteins.