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Assessing aptamer binding to viral proteins by HORIBA SPRi analysis

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Abstract

At NeoVentures we have developed aptamers for several viral proteins including but not limited to the spike and nucleoprotein of SARS-CoV-2 and the P24 coat protein of HIV. We immobilize recombinant forms of these proteins through their His tags to nickel columns for selection. As such, the inherent nature of these proteins to self-aggregate does not pose a problem at this stage. These proteins are similar to nanostructures however in their ability to aggregate and to assemble into viral cap structures. This inherent ability needs to be addressed in order to obtain accurate assessment of candidate aptamer binding with surface plasmon resonance imaging (SPRi) analysis. We will review the performance of various buffers with different detergents in terms of resonance measurements in SPRi with aptamers immobilized through a thiol bond on a gold surface.

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