

## **The specific binding of AFP to AP-273**

1. Coated: take 20 $\mu$ L (10mg / ml) Purified protein(AFP), then take 1980 $\mu$ L coated buffer, 100 $\mu$ L per well to add in 96-wells plate, Incubate in a 37 °C incubator for 2 hours.
2. Emptied and dry the residual liquid, and washed the 96-wells plate twice with 300 $\mu$ L of washing buffer.
3. Added 300 $\mu$ L (5 mg / ml) of BSA block Buffers to each well and allowed to stand at 4°C for 1 hour
4. Discard the liquid, wash the plate with 300 $\mu$ L washing-buffer 3 times, during the last time after washing empty the liquid and pat dry
5. The aptamer was arranged into diluted solution of 0.2,0.4,0.6,0.8,1.0 $\mu$ mol/L in concentration, 100 $\mu$ L of the appropriate concentration of the aptamer was added to 96-wells .The blank group was added with TE buffer, and the above substances were incubated at 37 °C for 2h.
6. Discard the liquid, wash the plate with 300 $\mu$ L washing-buffer 3 times, during the last time after washing empty the liquid and pat dry.
7. Added 100 $\mu$ L 1: 2000 diluted HRP- streptavidin to the 96-wells and incubated at 37 ° C for 1.5 h.
8. discard the liquid, wash the plate with 300  $\mu$ L of washing buffer three times, then soak with 300 $\mu$ L of rinse buffer for 5 min, then empty the liquid and pat dry, and then wash the plate with 300 $\mu$ L washing buffer 2 times, during the last time after washing empty the liquid and pat dry.
9. Added 10 $\mu$ L of TMB solution to 96-wells. After 20 mins of color development in the dark, added 50 $\mu$ L stop solution to terminate the reaction immediately. After the reaction was stopped, read the absorbance value at 450 nm.