

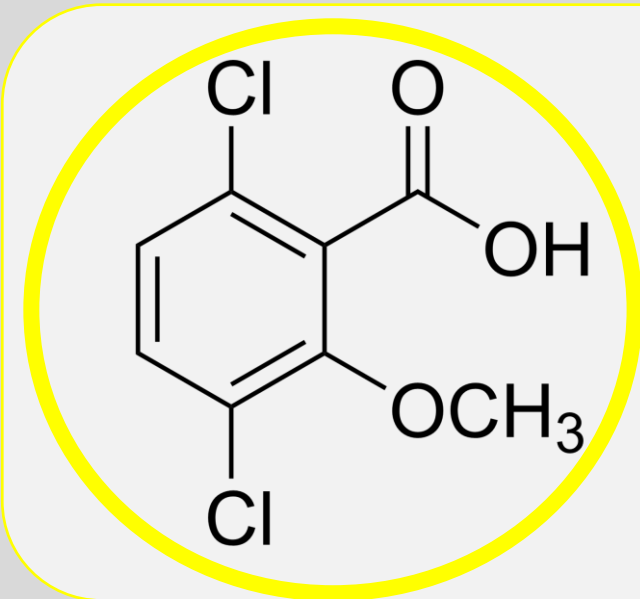
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Dicamba (3,6-dichloro-2-methoxybenzoic acid) is a broad-spectrum herbicide used in agriculture its residues in soil and water require high sensitivity analysis in order to establish the contamination level of the alimentary products and the environmental factors.

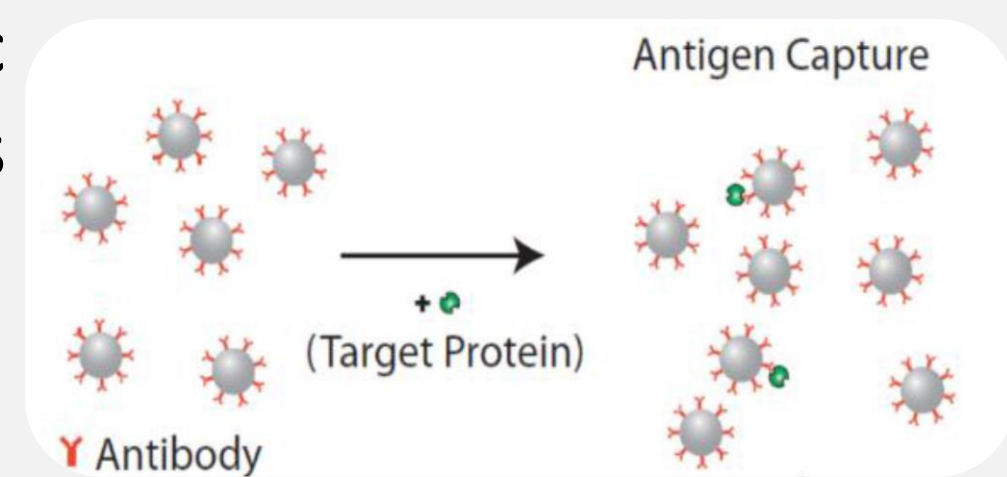


Nano-immunosorbents are nanoparticles functionalized with components of immune system (antigens/antibodies).



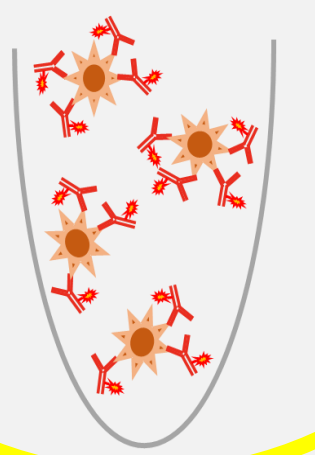
Polyclonal antibodies against residual pesticide 3,6-dichloro-2-methoxybenzoic acid (Dicamba) were obtained by immunization of New Zealand Rabbits experiments, with Dicamba-bovine serum albumin as immunogenic conjugate.

The gamma globulins were separated by chemical method using (NH₄)₂SO₄ due to its higher efficiency.



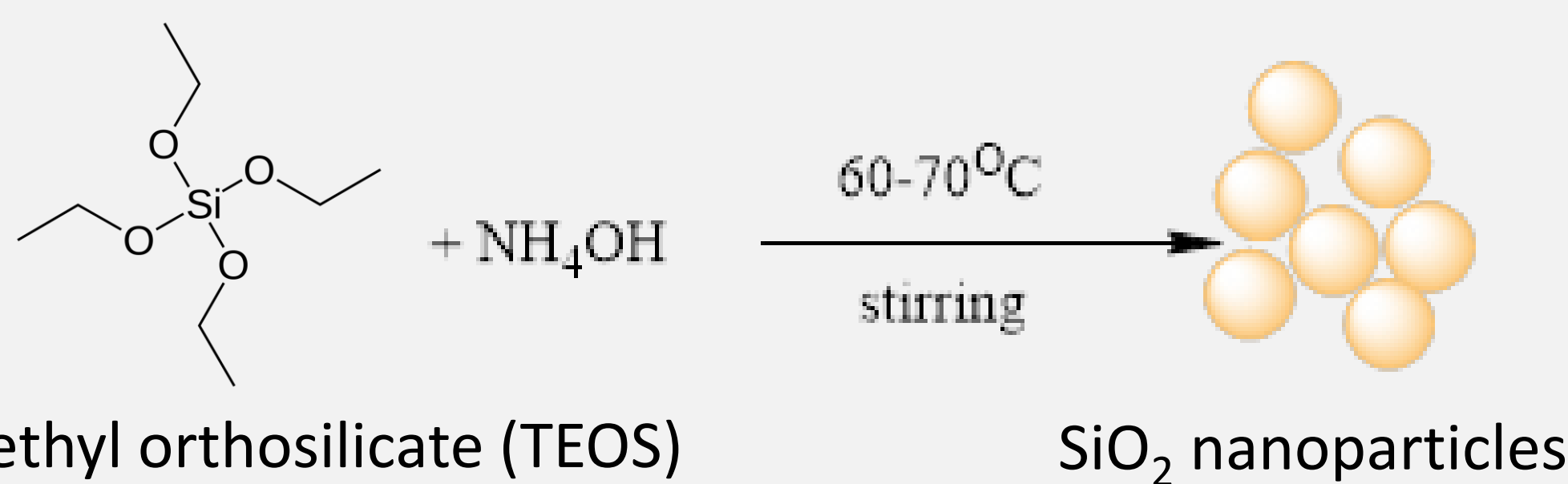
Nano - Enzyme Linked Immunosorbent Assay

nano-ELISA

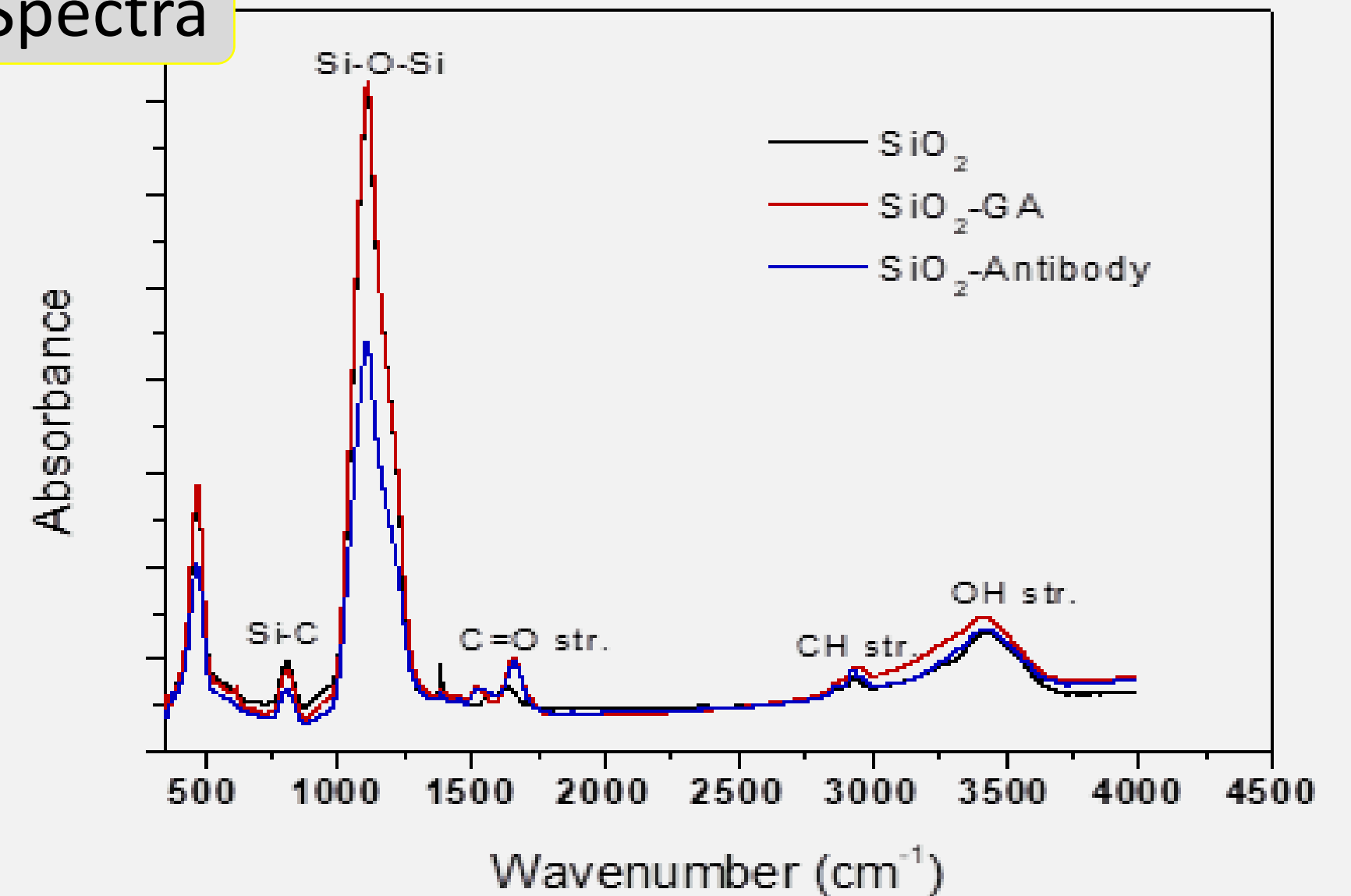


- ✓ is based on nano-immunosorbents
- ✓ the immune reaction between nano-immunosorbents and dicamba analyte, both in suspension has the advantage of minimizing the diffusion distances between antigen and antibody and time to reach the chemical equilibrium in comparison with heterogeneous ELISA technique.

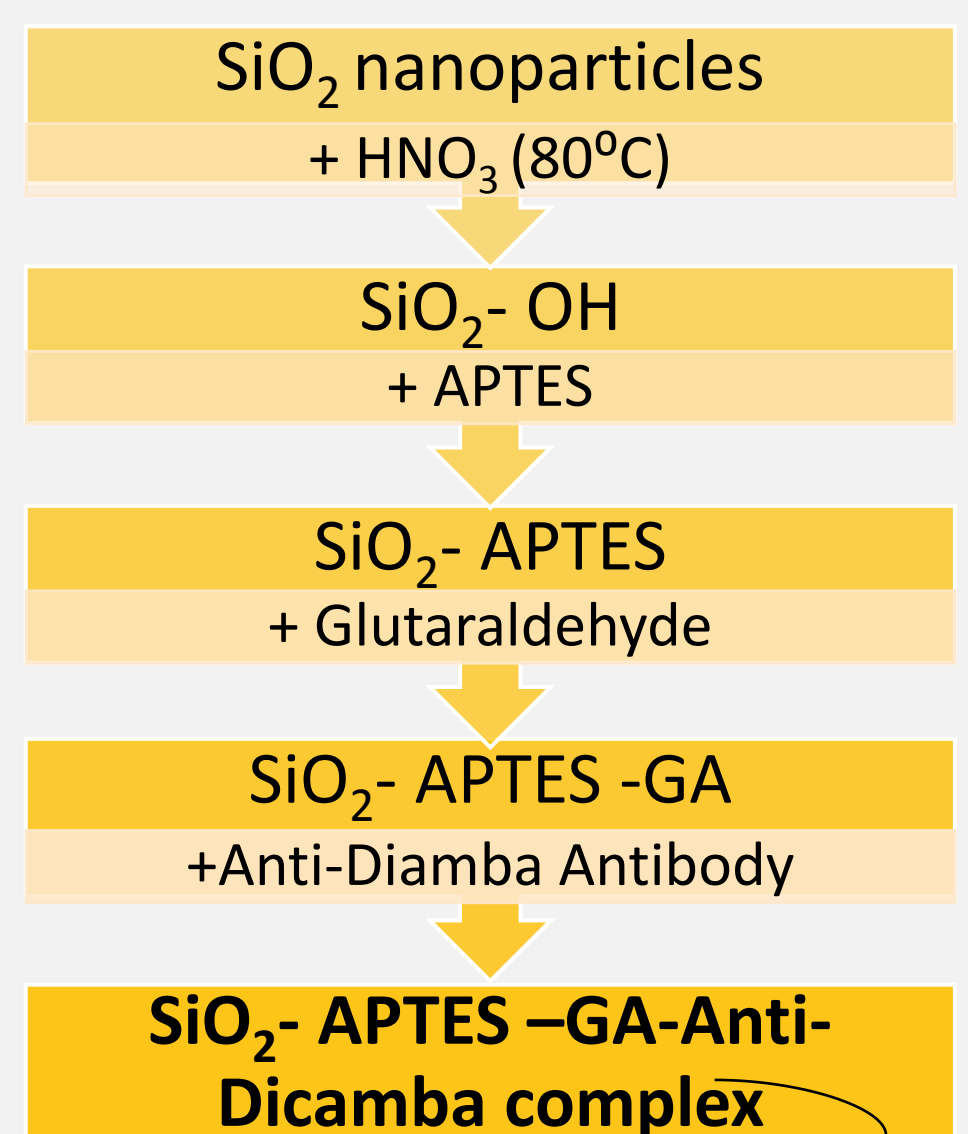
Synthesis of SiO₂ nanoparticles



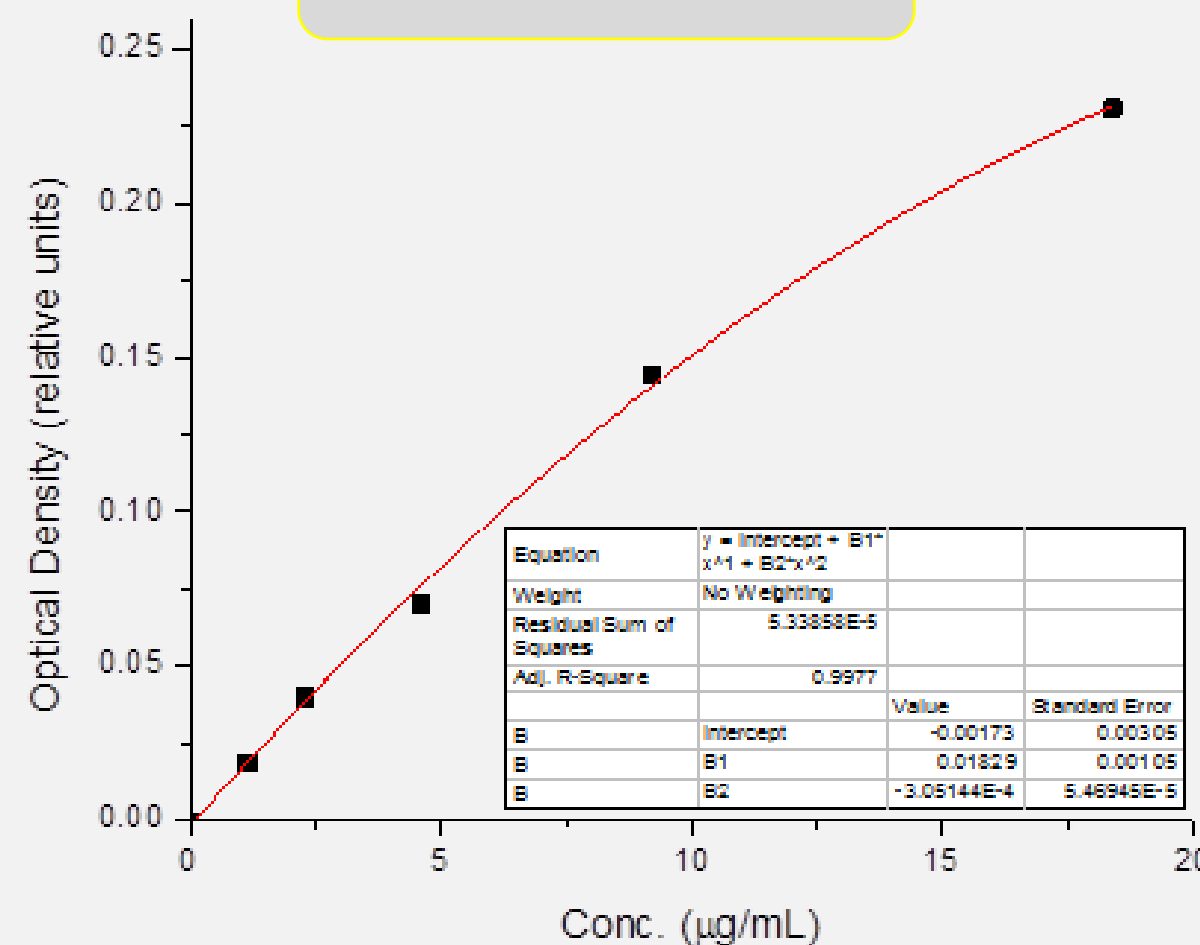
FT-IR Spectra



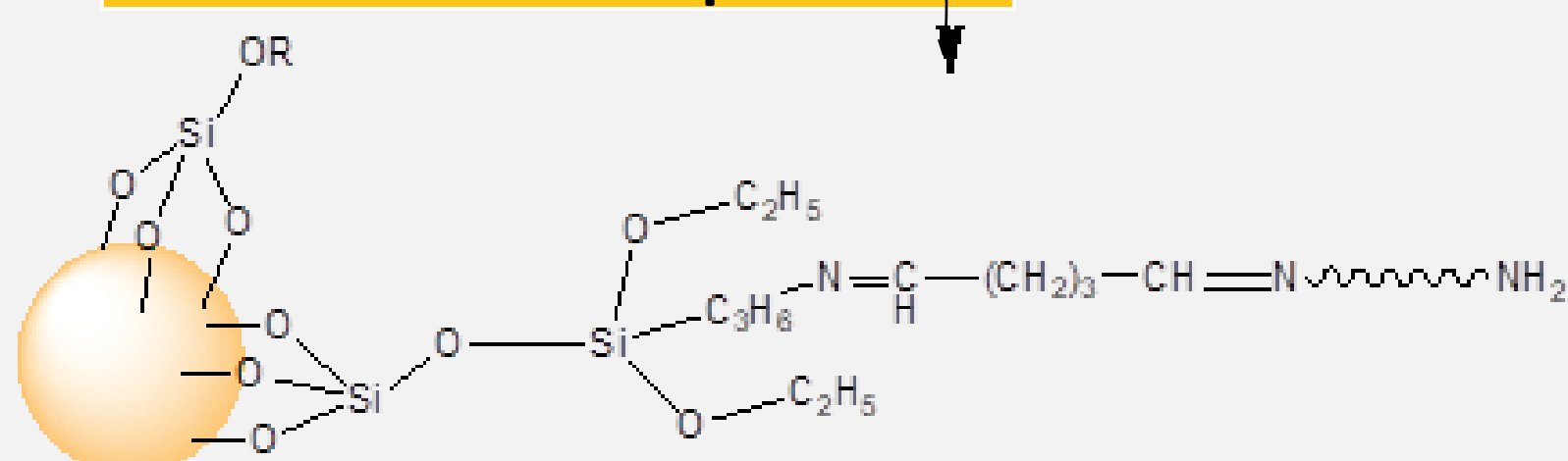
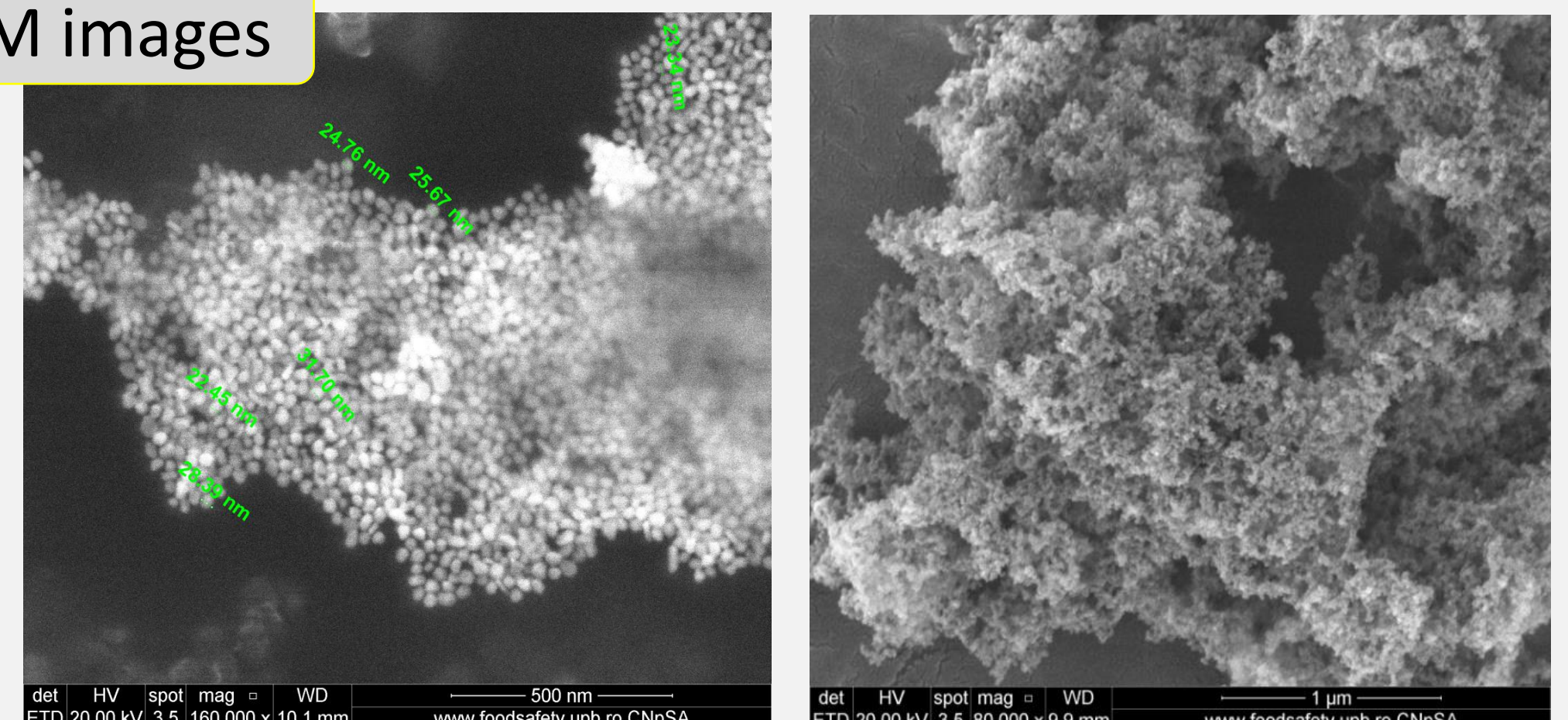
Functionalization of SiO₂ nanoparticles



Bradford Curve

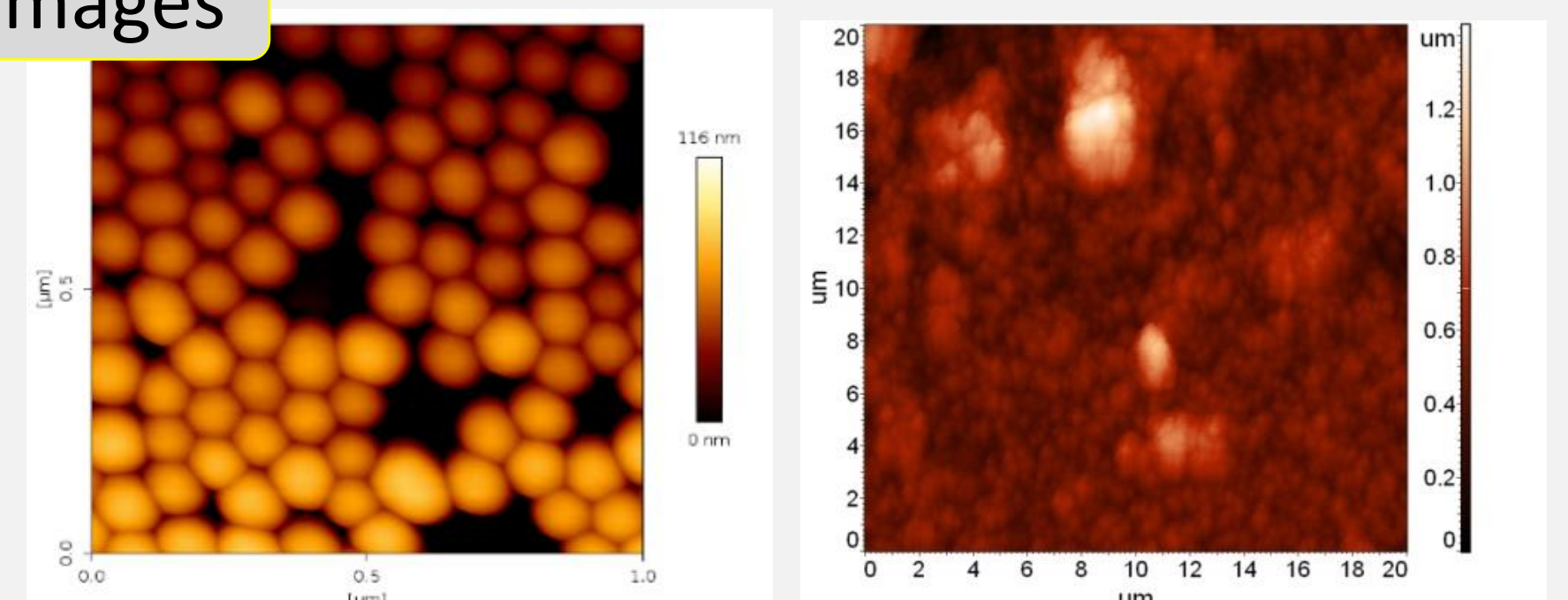


SEM images



Nanoparticles based on:	Protein binding capacity/mg of NP	Blank diameter	With Ab diameter
SiO ₂	0,46 mg	20 nm	45 nm

AFM images



SiO₂ Np

SiO₂-Antibody Np