Separation and characterization of specific Anti-Dicamba Antibodies using antigen type SiO_2-based nano-immunosorbents,

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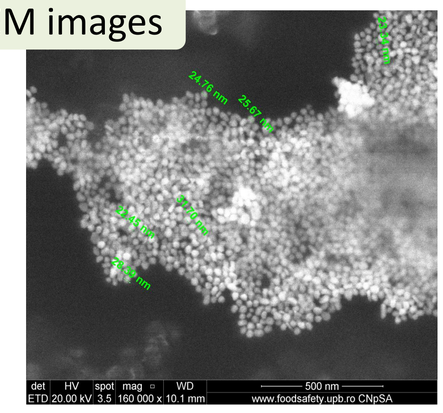
The need for the purification of specific antibodies is given both by the source from which they are isolated and by their subsequent use. The aim of separating anti-dicamba antibodies is to select from the polyclonal antiserum the specific antibodies with the highest affinity anti-dicamba antibodies

Functionalization of nanoparticles with antigens combines the properties of the silica nanoparticles with the specific and selective recognition ability of the antibody-antigen interactions.

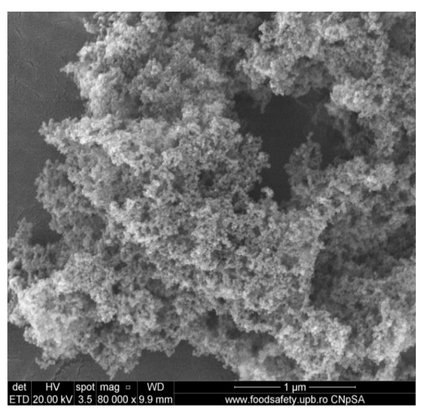
Nano-immunosorbents based on silica nanoparticles functionalized with dicamba (3,6-dichloro-2-methoxybenzoic acid) antigen were developed to be used for separation of specific anti-dicamba antibodies from rabbit serum.

Separation by affinity classes was done by eluting solutions of different pH's over the Ag type Nano-immunosrbent. Separation of specific anti-Dicamba antibodies with high affinity constant is performed at extreme acid pH.

SEM images

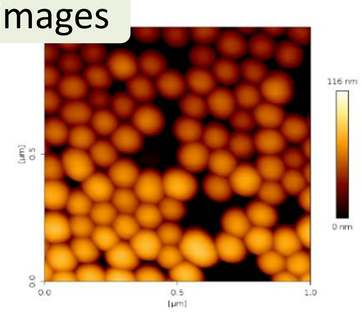


SiO_2 Np

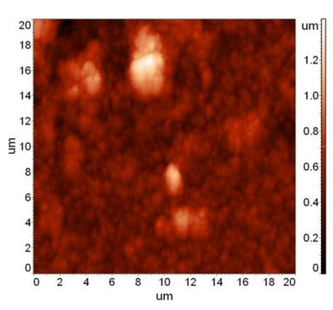


SiO_2-Antibody Np

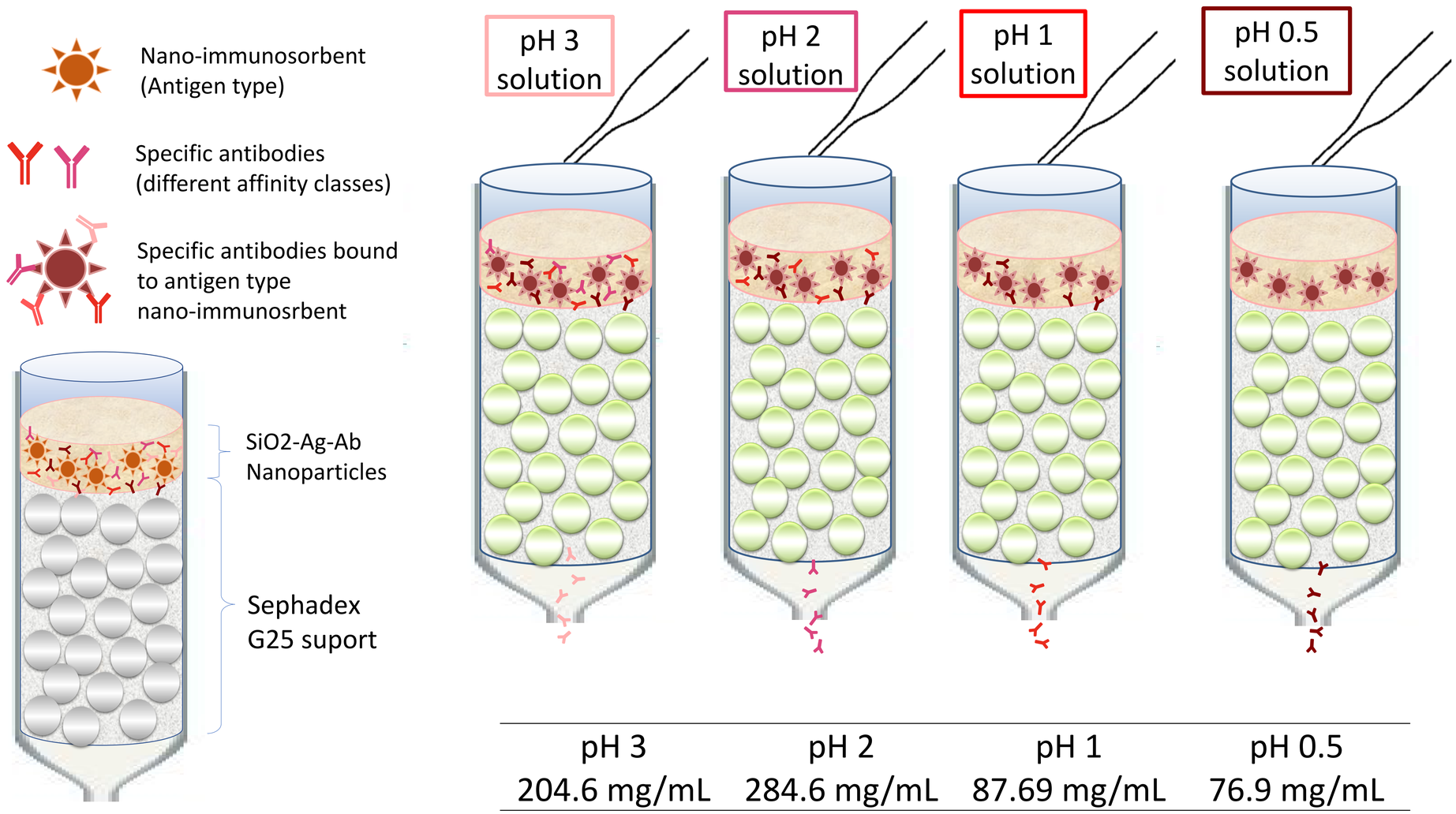
AFM images



SiO_2 Np



SiO_2-Antibody Np



pH 3	pH 2	pH 1	pH 0.5
204.6 mg/mL	284.6 mg/mL	87.69 mg/mL	76.9 mg/mL

Antibody Recovery 75.4%

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