CLAIMS

[Claim 1]

A method for producing a reagent for detection of antibody binding to an antigenic protein; comprising a cationized antigenic protein and beads;

the method comprising the steps of:

solubilizing the antigenic protein by cationization wherein the cationization is performed by the binding of a cationizing agent to thiol groups of the antigenic protein; and

allowing the resultant cationized antigenic protein to bind to the beads

wherein the cationizing agent is TAPS-sulfonate or TAP-Br.

[Claim 2]

The method according to claim 1, wherein the antigenic protein is a full-length protein.

[Claim 3]

The method according to claim 1 or 2, wherein the antigenic protein is a membrane protein.

[Claim 4]

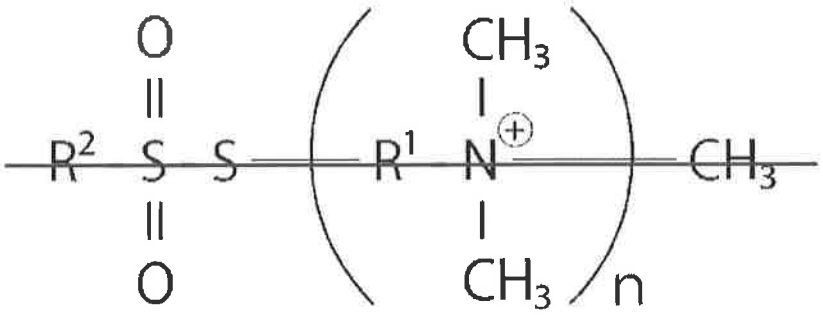
The method according to any one of claims 1 to 3, wherein the antigenic protein is a cancer antigenic protein.

~~[Claim 5]~~

~~The method according to claim 1, wherein the cationizing agent is a compound represented by~~

the following formula:

[Formula 1]



~~wherein R^1 represents a linear alkylene group having 2 to 20 carbon atoms; R^2 represents an alkyl group having 1 to 3 carbon atoms; and n represents any integer of 1 to 3.~~

~~[Claim 6]~~

~~The method according to claim 5, wherein the compound is TAPS-sulfonate wherein R^1 is $-(CH_2)_3-$; R^2 is CH_3-; and n is 1.~~

~~[Claim 7]~~

~~The method according to claim 5, wherein the compound is TAP3S-sulfonate wherein R^1 is $-(CH_2)_3-$; R^2 is CH_3-; and n is 3.~~

~~[Claim 8]~~

~~The method according to claim 1, wherein the cationizing agent is TAP-Br.~~

[Claim ~~9~~5]

The method according to any one of claims 1 to ~~8~~4, wherein the beads are magnetic beads.

[Claim 6~~10~~]

A reagent produced by a method according to any one of claims 1 to ~~9~~5.

[Claim 7~~11~~]

A method for detecting an antigen-specific antibody contained in a sample, the method comprising the steps of: contacting a reagent according to claim ~~10~~ 6 with the sample; adding thereto an antibody-binding labeled secondary antibody to allow the secondary antibody to bind to the antibody; recovering the reagent for antibody detection; and detecting the reagent for antibody detection bound with the antibody.

[Claim 8~~12~~]

The method according to claim ~~11~~7, wherein the sample is an isolated body fluid.