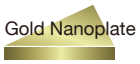
No. 20250318-1
Dai Nippon Toryo.co.Ltd.

For highly sensitive detection Gold Nanoplates

Methods for preparing antibody conjugates

- By conjugating functional substances such as antibodies with gold nanoplates, they can be used as detection color materials.
- Conjugates can be easily prepared by simply mixing a gold nanoplate dispersion with a functional protein such as an antibody.

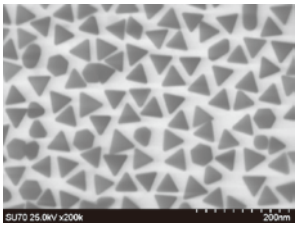
Features of Gold Nanoplates



- Exhibits a vivid blue color.
- An aqueous dispersion of disk shaped Gold Nanoparticles.
- Can be conjugated with relatively simple procedures without complex chemical reactions.

A

B

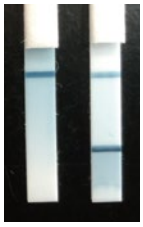


A:Aqueous dispersion of Gold Nanoplates
B:Transmission electron microscope image of Gold Nanoplates

Conjugated gold nanoplates can be used as detection colorants for immunochromatography.

C

D

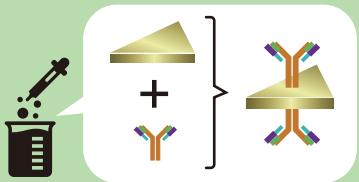


C：Immunochromatographic kit using gold nanoplates for detection（Exorapid-qIC®）
D：Immunochromatographic detection using gold nanoplates

Three features of antibody conjugation

1. Simple operability

Antibody sensitization is possible just by mixing



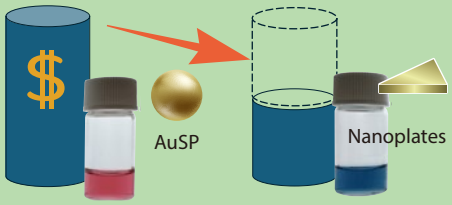
2. Versatility

Can be conjugated with various antibodies

<ex>
- Anti hCG
- Anti CD9

3. Cost reduction effect

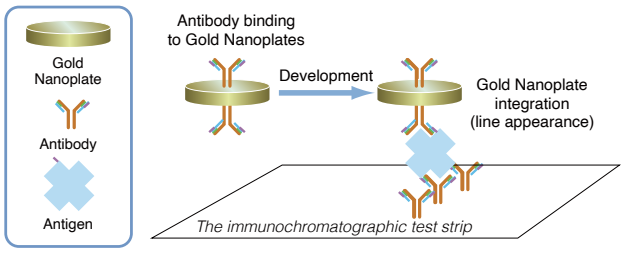
Reduce antibody cost by 50% compared red spherical gold nanoparticles (AuSP)



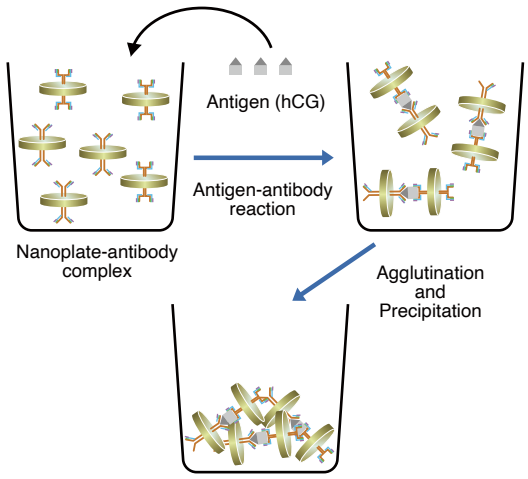
Application Examples

Because "Conjugated gold nanoplates" can recognize antigens, it is useful in various biochemical experiments, including as an immunochromatographic colorant.

Schematic diagram of immunochromatography test



Coagulation and Sedimentation Method

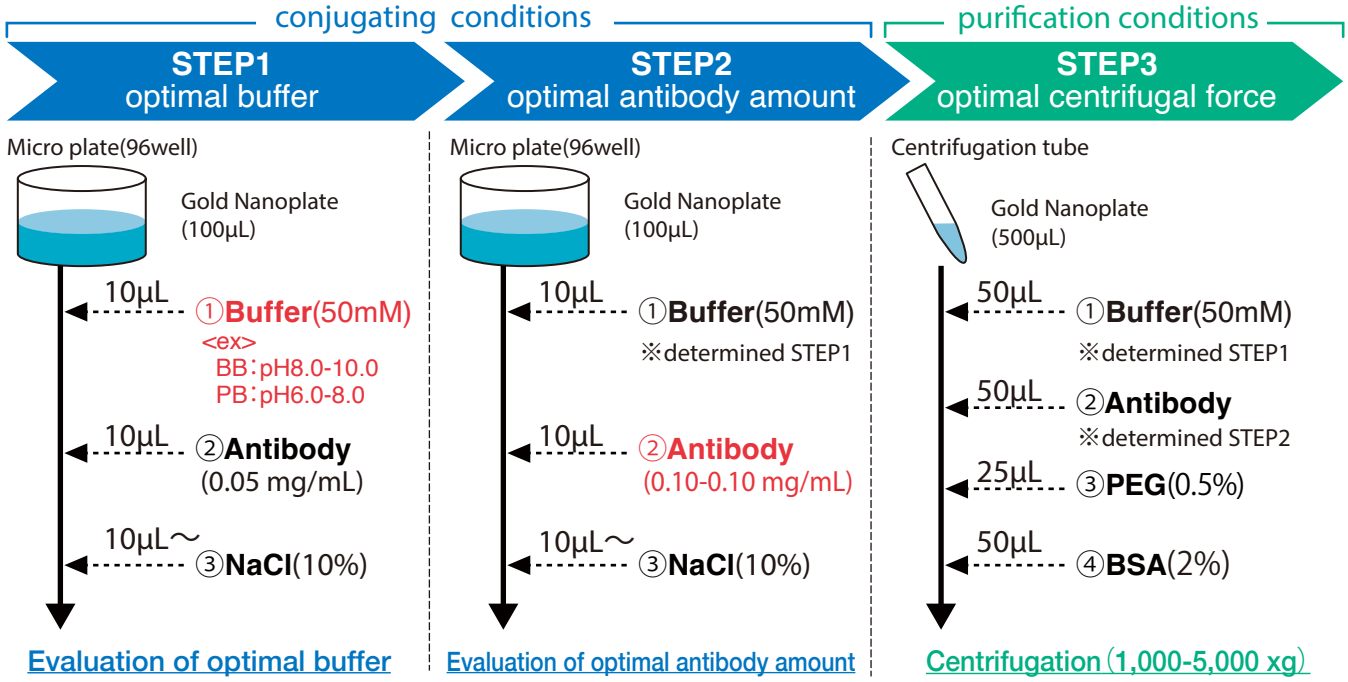


Methods for preparing antibody conjugates(Next) ⇒

Methods for preparing antibody conjugates

STEP1,2：The optimal conditions are evaluated based on changes in the spectroscopic spectrum when the antibody（②）or NaCl（③）is added.
STEP 3　：The antibody is conjugated based on the optimal conditions determined in STEP 1 and 2.
STEP 3　：The purification conditions can be evaluated by comparing the spectroscopic spectrum before and after centrifugation.

1. Experimental Method



2. Measurement and evaluation methods

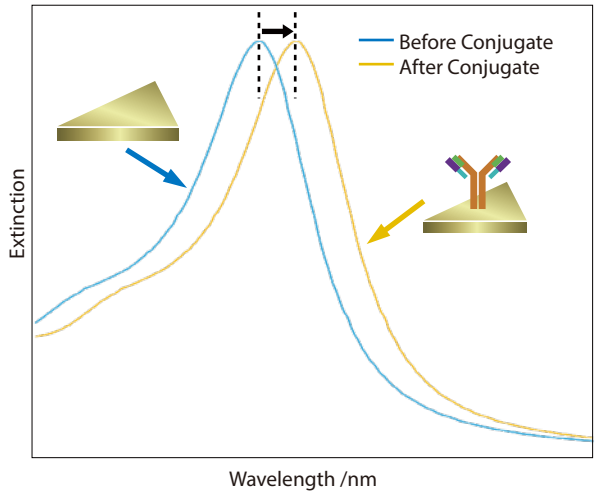


Figure.1：Spectral changes after addition of antibody

When an antibody is conjugated onto a gold nanoplate, the maximum absorption wavelength (λ_{Max}) shifts to the longer wavelength side due to changes in surface plasmon.

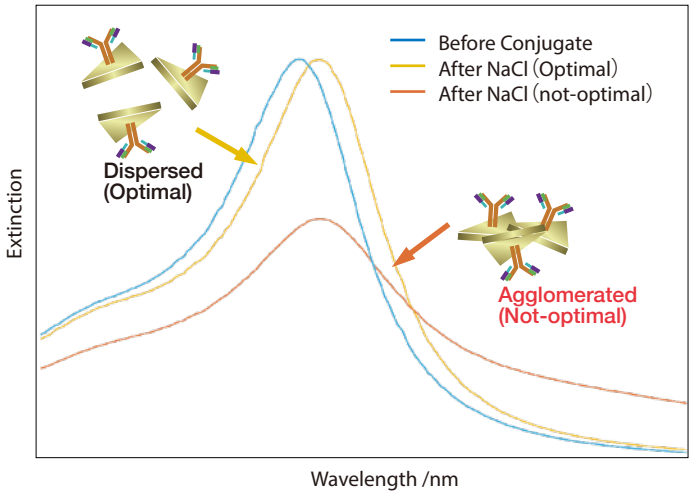


Figure.2：Spectral changes under optimal and not-optimal conditions

If aggregation occurs due to inappropriate pH or antibody amounts, the peak will be gentler and the degree of aggregation (O.D. λ_{Max}/O.D.750) will be higher.

＜Not-optimal＞
・Long wavelength shift cannot be observed
・The maximum absorbance is significantly decreased

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If you have any questions, please feel free to contact us at the address below!

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