

Enhanced Lateral Flow and nano-ELISA With Catalytic Gold-Platinum (AuPt) Nanoparticles



40 nm Gold-Platinum (AuPt) Nanoparticles

- Simple, efficient passive conjugation and high stability
- Performs like Gold in Lateral Flow with distinct brown color
- Peroxidase-like activity for catalytic signal generation
- Use same conjugate for Lateral Flow and nano-ELISA

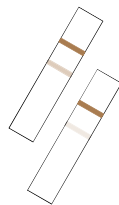
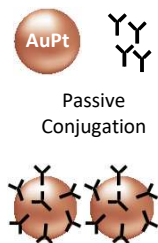
Enhance Lateral Flow with Catalytic Signal Amplification

✓ 10x Increase in Sensitivity and Signal Intensity

✓ Analyze Visually/Optically like Gold

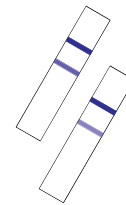
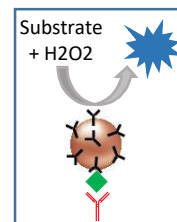
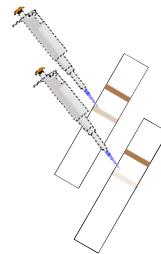
Standard Sensitivity Detection

Prepare and use AuPt conjugates like Gold conjugates



Enhanced Sensitivity Detection

Use AuPt Peroxidase-Like activity for signal amplification




Prepare AuPt Conjugate

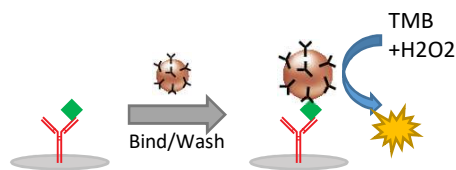
Lateral Flow Using Conjugate

Add Peroxidase Substrate + H₂O₂

Analyze Enhanced Signal



Simple nano-ELISA workflow with Peroxidase-mimic AuPt

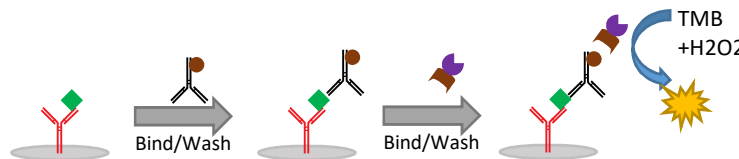
Sandwich ELISA with AuPt conjugate ()



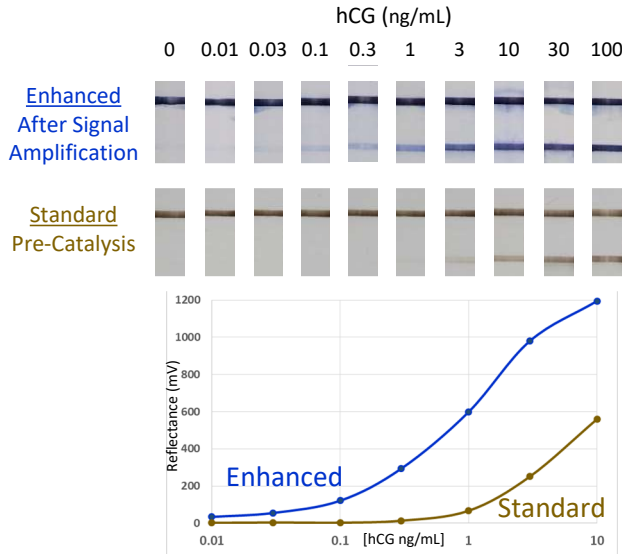
✓ Simplify Workflow

✓ No complicated HRP-Ab conjugations

Sandwich ELISA with Biotin-Ab () and HRP-Streptavidin ()



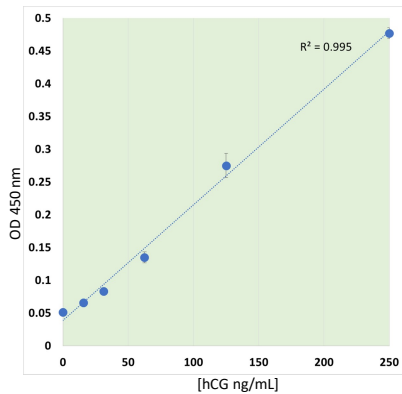
Example: 10x Increase in hCG Lateral Flow Sensitivity



AuPt-anti-β-hCG conjugates prepared by passive conjugation were used to prepare lateral flow dipsticks with anti-mouse IgG control line and goat anti-β-hCG test line.

Images (top) and reflectance (bottom) of strips taken before and after TMB/H₂O₂ incubation demonstrate 10-fold increases in both assay sensitivity and signal when analyzing an hCG dose response series.

Example: hCG Sandwich nano-ELISA



hCG (ng/mL)	Mean OD (450 nm)	% CV
1000	1.222	2.4%
500	0.684	1.0%
250	0.477	1.8%
125	0.275	6.7%
62.5	0.135	6.3%
31.25	0.083	5.1%
15.63	0.066	1.1%
0	0.052	4.1%

AuPt-anti-β-hCG conjugates prepared by passive conjugation were used as reporters in sandwich ELISA with replicate dilution series of hCG antigen. Colorimetric signal obtained with TMB/H₂O₂ demonstrated good linearity response with estimated LOD of 31.25 ng/mL. (Data provided by Quantiscientifics, Inc., Orange, CA)

Ordering

Gold-Platinum Nanoparticle Products

Cat Number	OD	Vol (mL)
AP40-1-50	1	50
AP40-1-100	1	100

Contact us for:

- Quotations
- Custom OD and volume options
- Evaluation samples

Orders may be placed online at nano.imra.com or by sending a Purchase Order to nano@imra.com.

The diagram shows three vertical assay strips. The first strip is labeled 'AuPt' and has a single red band. The second strip is labeled 'Au40' and has a single red band. The third strip is labeled 'AuPt + Au40' and has two red bands. To the right of the strips, text reads: '40 nm Gold also available' and 'Try our economical 40 nm Gold (Au40) with AuPt for optically-distinct assays or multicolor assays.'



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