

Facile Synthesis of Hair Extract Caped Gold and Silver Nanoparticles and their Biological Applications

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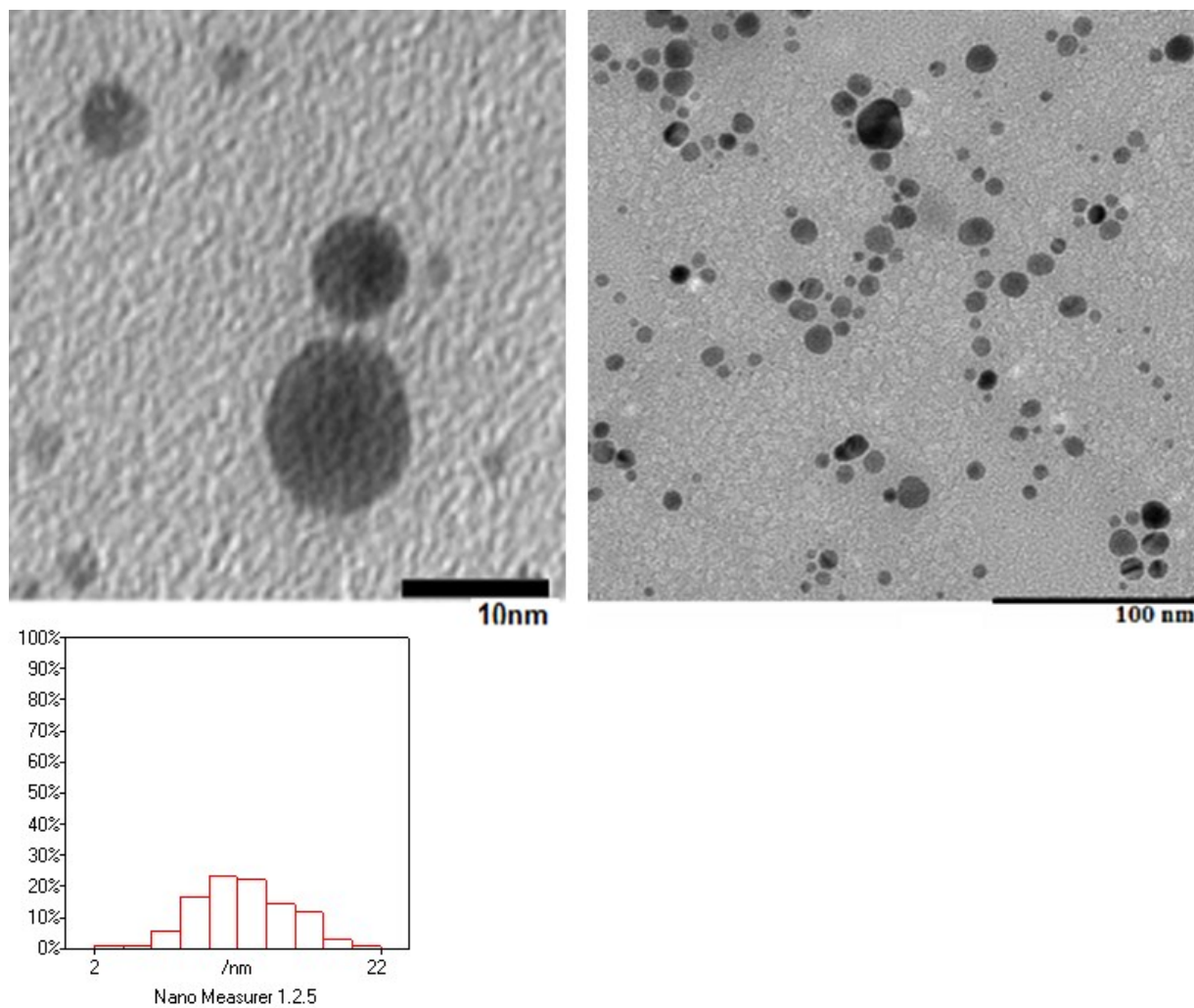


Figure S-1: TEM images of AuHR.

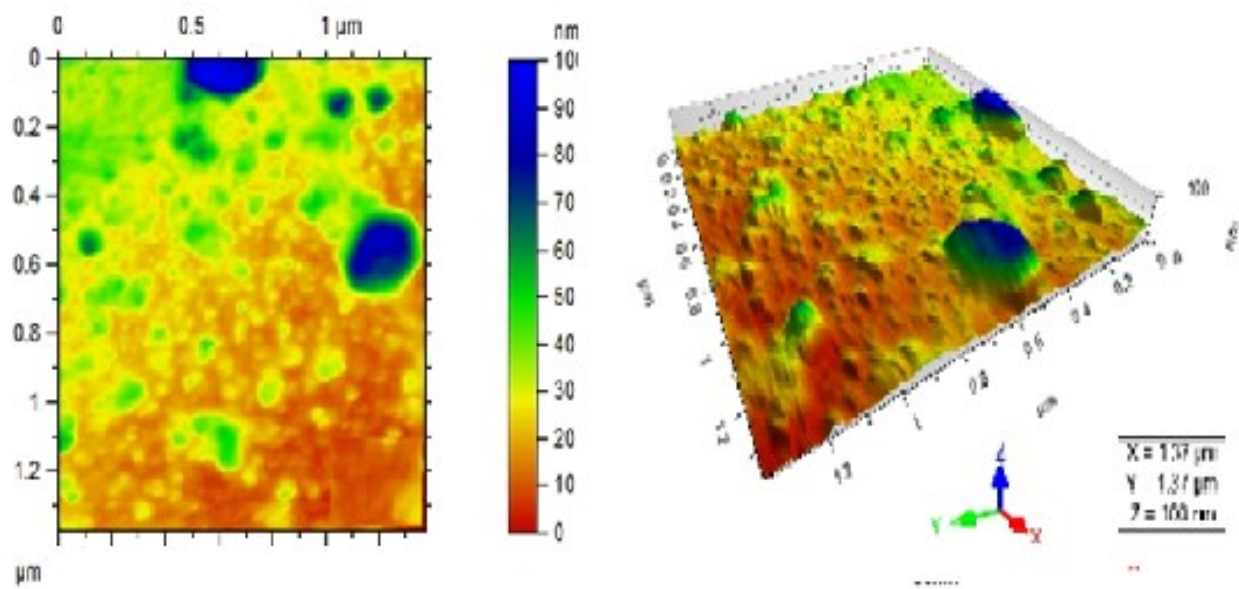


Figure S-2: AFM images of AuHr.

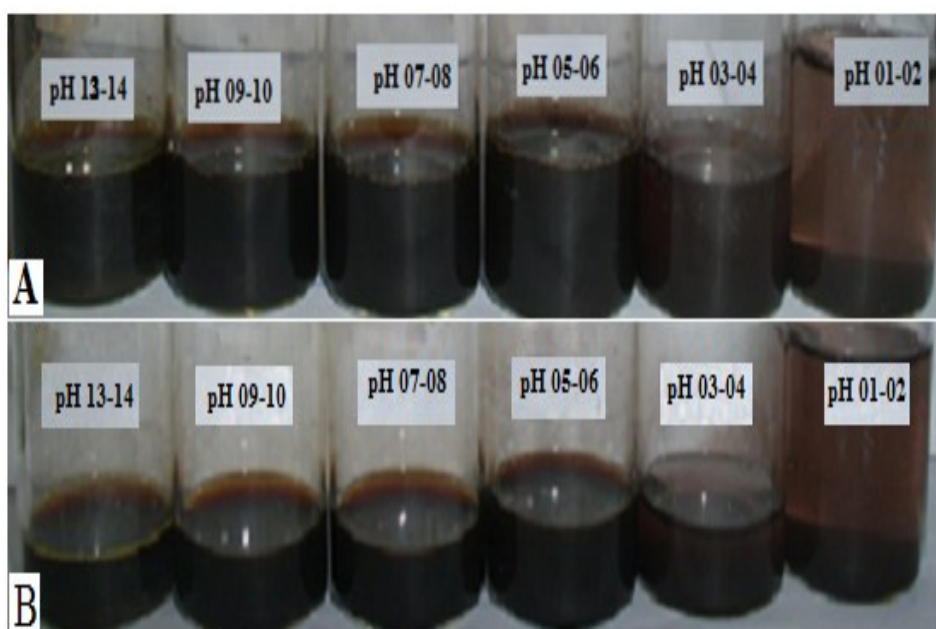
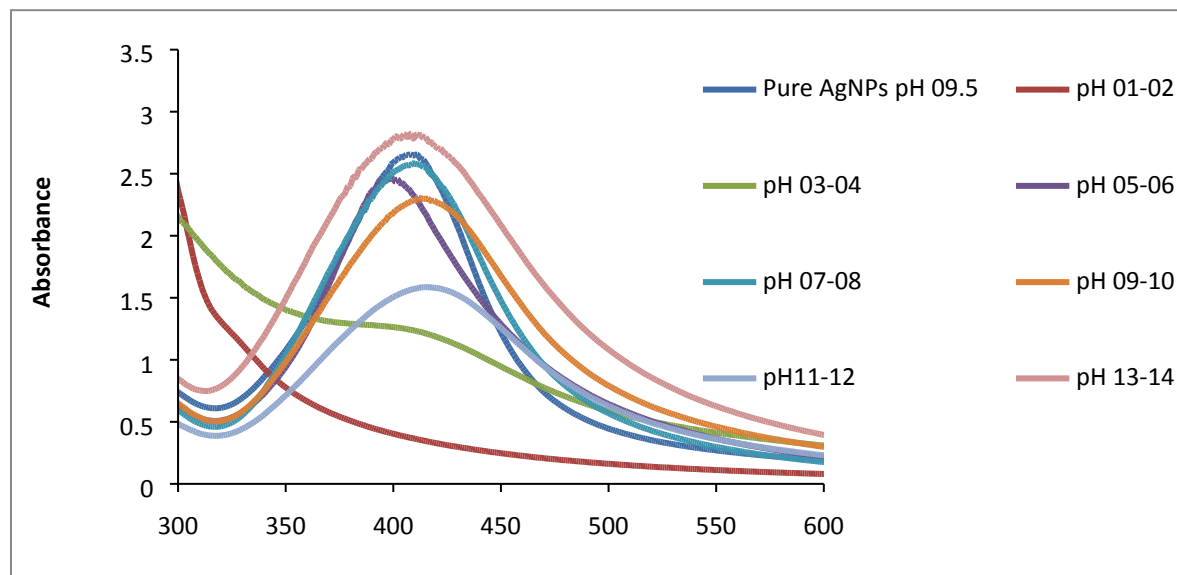


Figure S-3: pH stability of AgHr. “B” concentrated and “A” diluted.

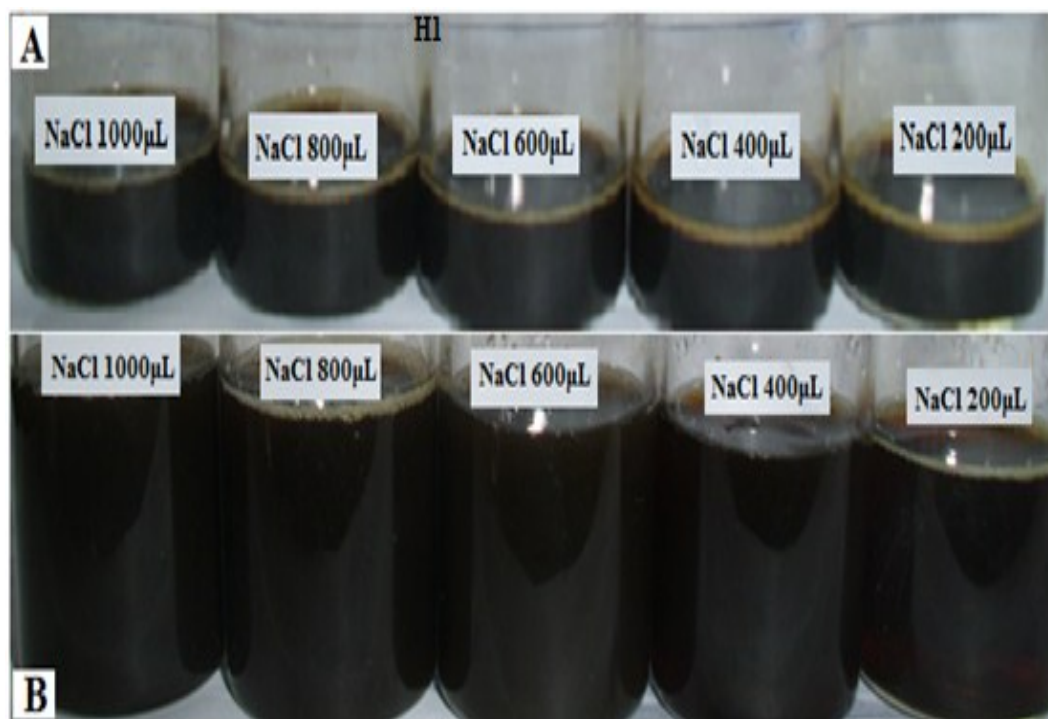
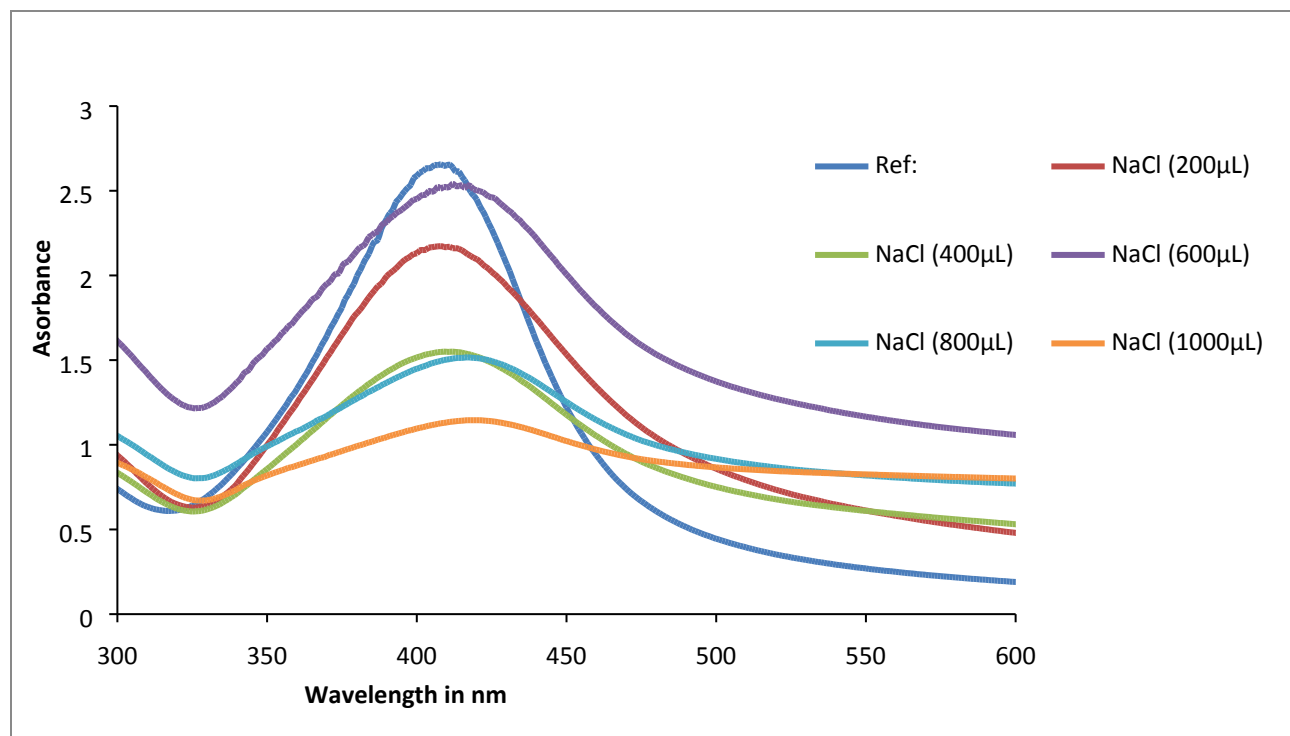


Figure S-4: Salt stability of AgHr against NaCl solution. “A” concentrated and “B” diluted.

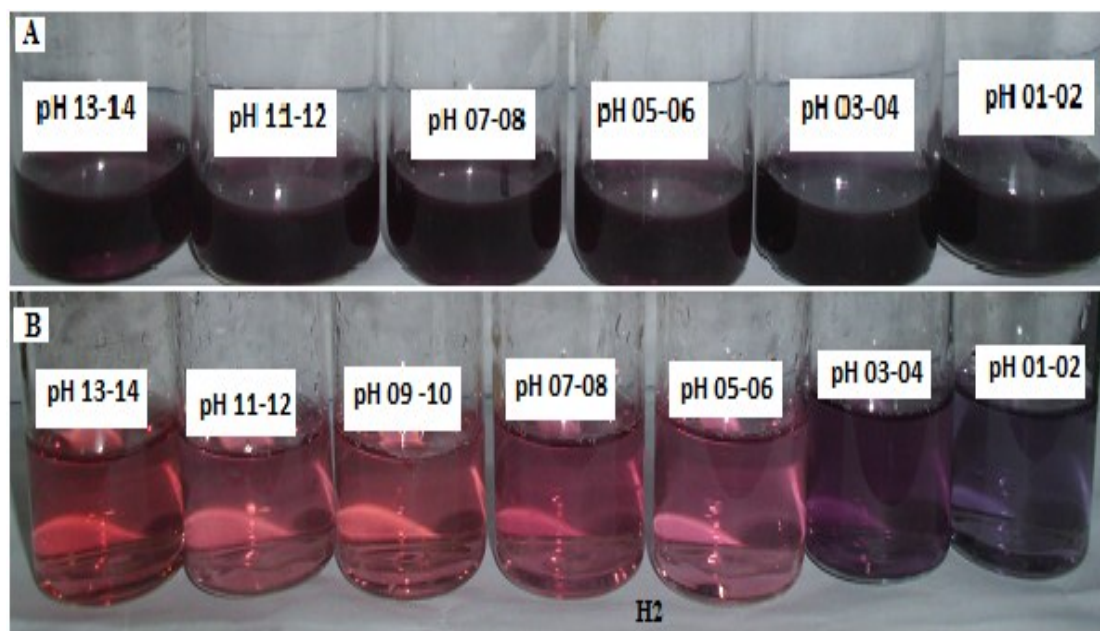
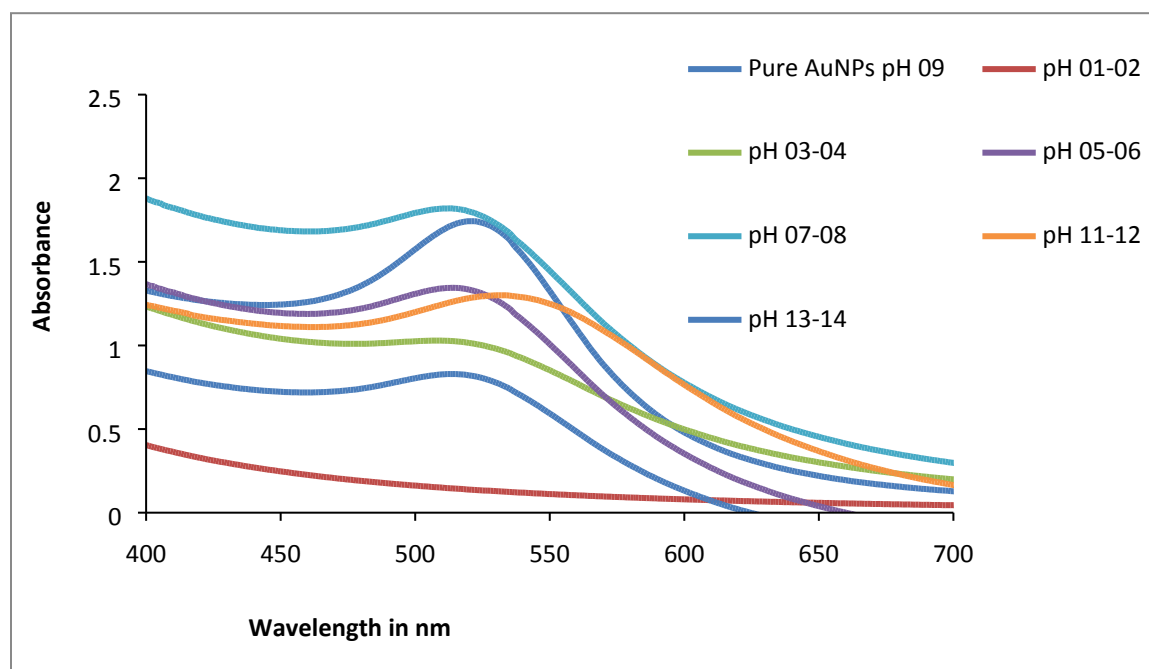


Figure S-5&6: pH stability of AuHr.

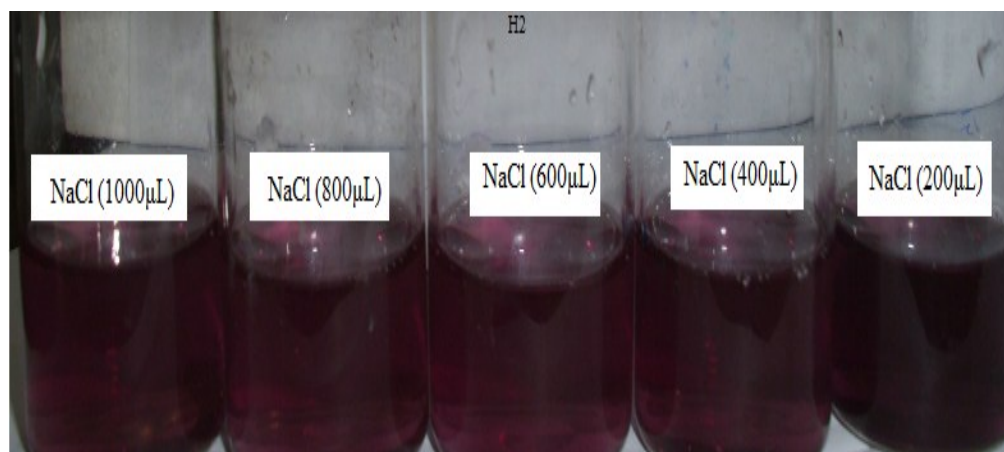
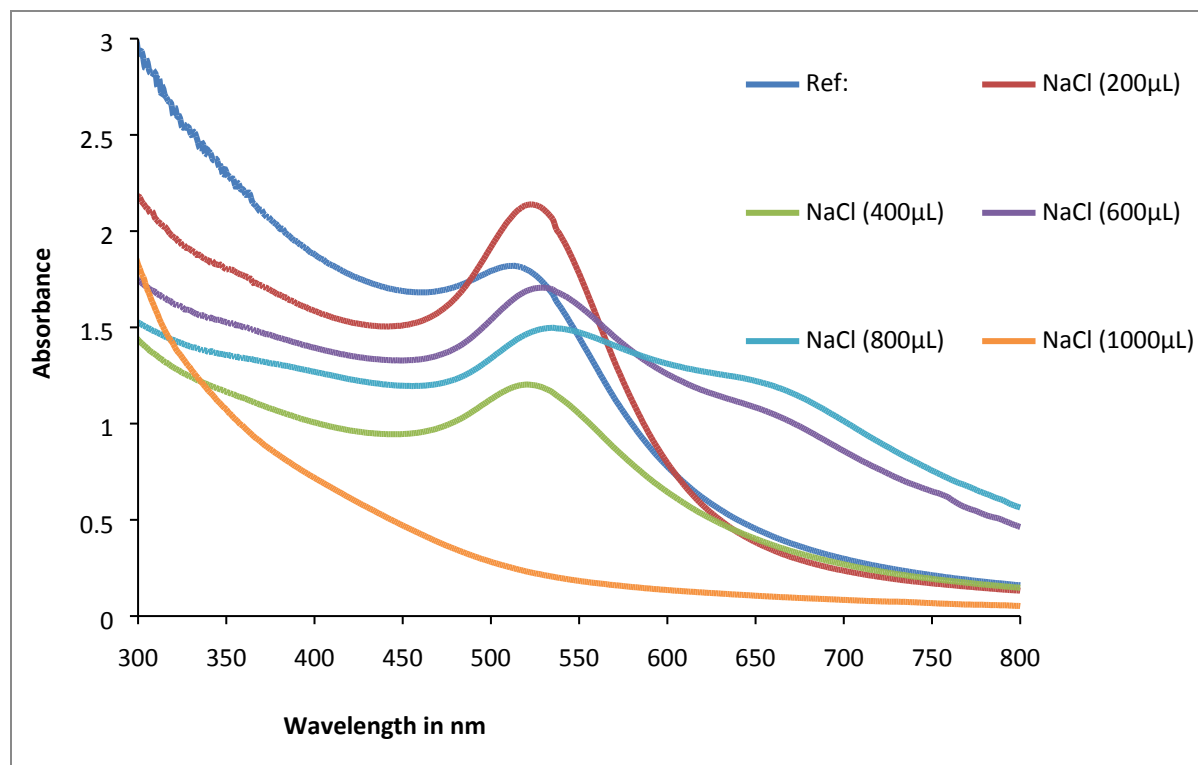


Figure S-7&8: Salt stability AgHr.

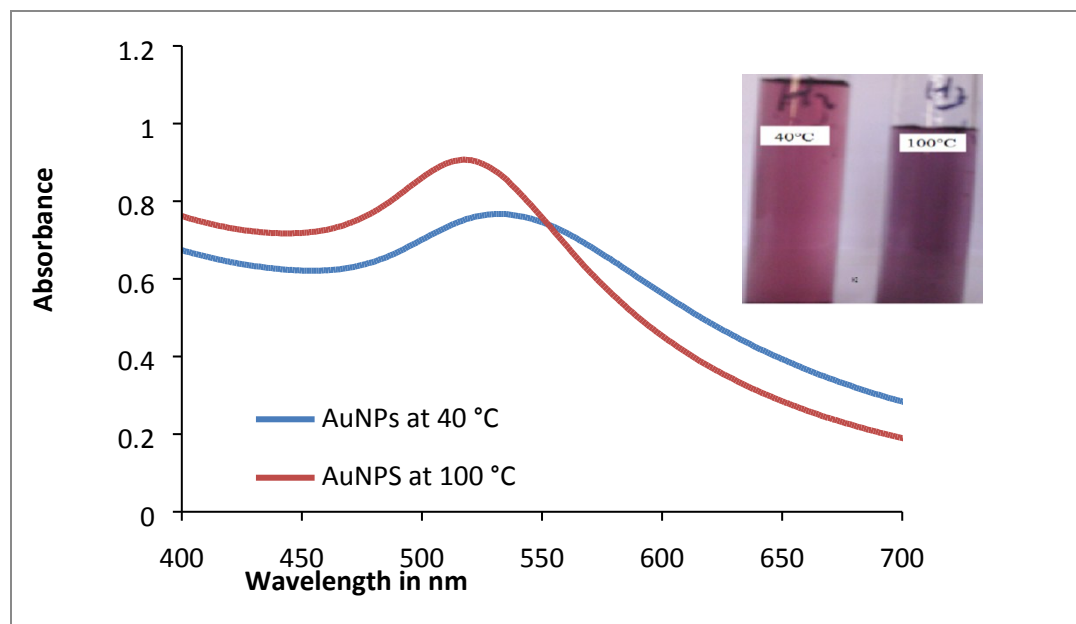


Figure S-9: Heat stability of AgHr.

Table S-1. Presents urease inhibition activities of hairs' extract, Ag and Au nanoparticles.

Enzymes inhibition activities		Hairs' extract	H.Ext-AuNPs	Blank AuNPs	H.Ext AgNPs	Blank AgNPs	Standard ($\mu\text{g}/\text{mL}$) (thiourea)
Urease	%Inhibition	99.2	65.0	9.5	96.5	41	99.8
	$\text{IC}_{50} \pm \text{S.E.M}$ ($\mu\text{g}/\text{mL}$)	32.1 ± 0.57	119.3 ± 1.01	N/A	58.0 ± 1.03	N/A	21.2 ± 1.3

Table S-2: Xanthine oxidase inhibition activities of hairs' extract Ag and Au nanoparticles

Enzymes inhibition activities		Hairs' extract	H.Ext-AuNPs	Blank AuNPs	H.Ext AgNPs	Blank AgNPs	Standard ($\mu\text{g/mL}$) (Allopurinol)
Xanthine Oxidase	%Inhibition	41	92.4	2.0	83.1	9.5	99.6
	$\text{IC}_{50} \pm \text{S.E.M}$ ($\mu\text{g/mL}$)	N/A	3.0 ± 0.01	N/A	3.71 ± 0.05	N/A	0.47 ± 0.03

Table S-3. The antibacterial activities of biomaterials' extract stabilized Ag & Au NPs.

Nanoparticles and drug	Bacterial Species			
	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>S. aureus</i>	<i>K. pneumoniae</i>
H.Ext-AgNPs	50 %	60 %	50 %	57 %
	08 ± 0.66 mm	06 ± 0.33 mm	09 ± 0.68 mm	08 ± 0.39 mm
H.Ext-AuNPs	45 %	80 %	50 %	57 %
	07 ± 0.33 mm	08 ± 0.79 mm	09 ± 0.13 mm	08 ± 0.57 mm
Standard Drug	100%	100%	100%	100%
	16 ± 0.33 mm	10 ± 0.21 mm	18 ± 0.28 mm	14 ± 0.13 mm