Electronic Supplementary Material (ESI) for Analytical Methods.
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Electronic supplementary information

β-cyclodextrin protected gold nanoparticles based cotton swabs as an effective candidates for specific sensing of trace level of cyanide

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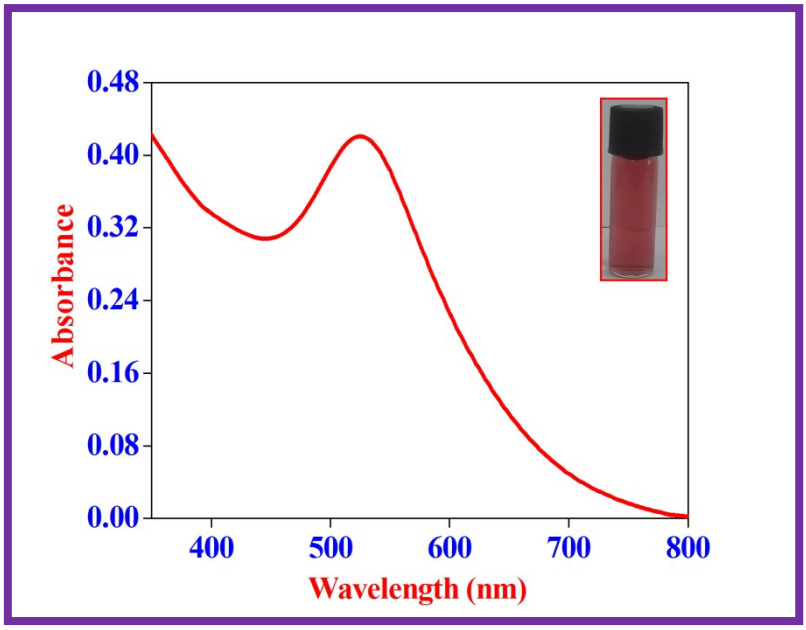

Fig. S1. Absorption spectrum of β-CD AuNPs and inset shows corresponding photograph.

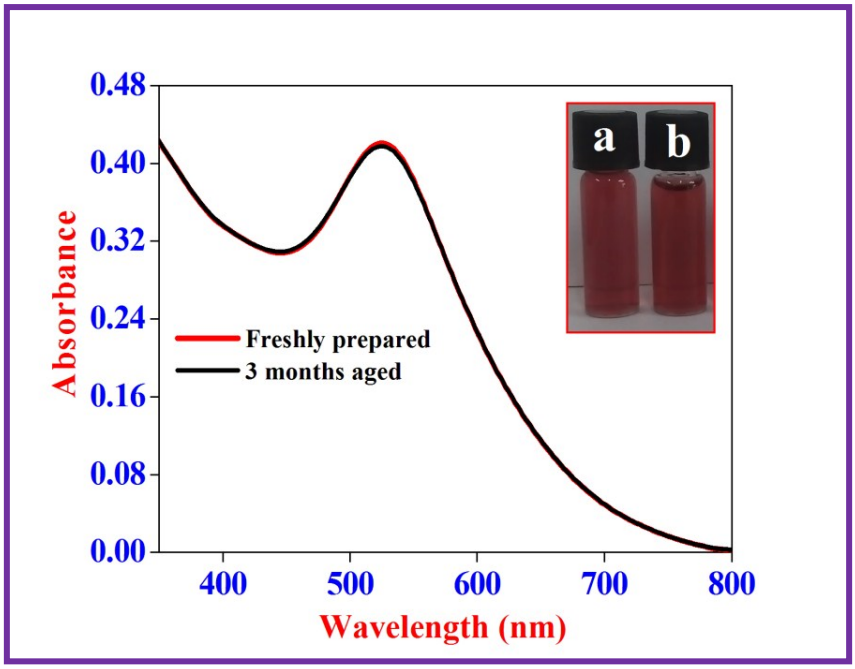

Fig. S2. Absorption spectra of freshly prepared and three months aged β-CD AuNPs and inset shows corresponding photographs of (**a**) freshly prepared and (**b**) three months aged β-CD AuNPs.

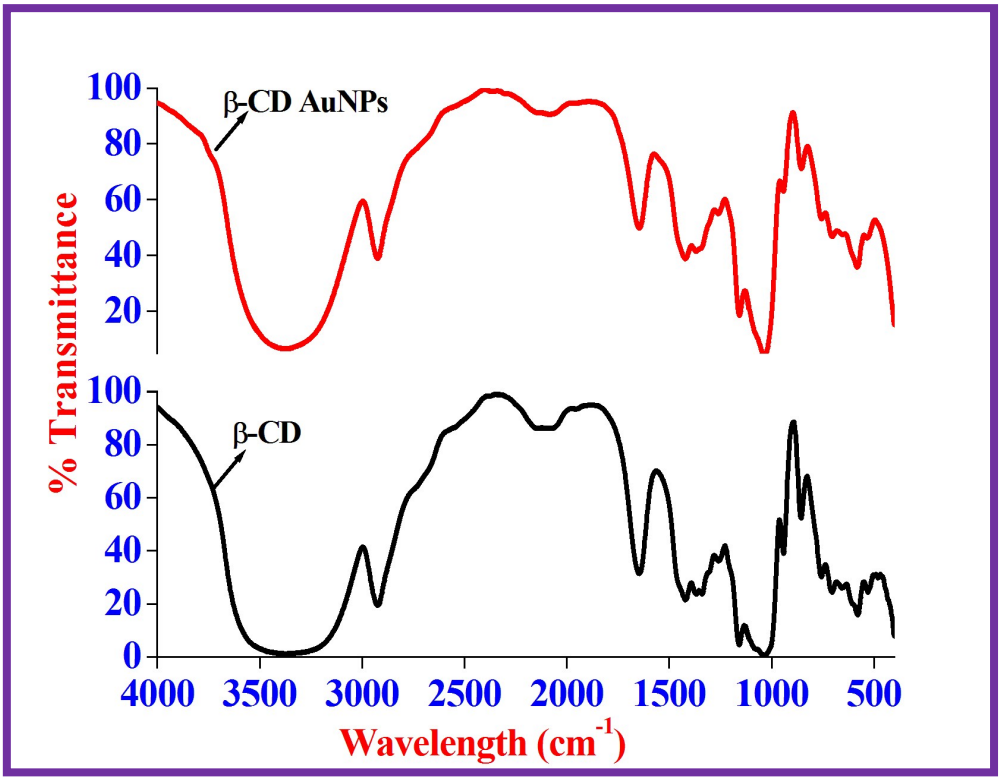

Fig. S3. FT-IR spectra of pristine β-CD and β-CD AuNPs.

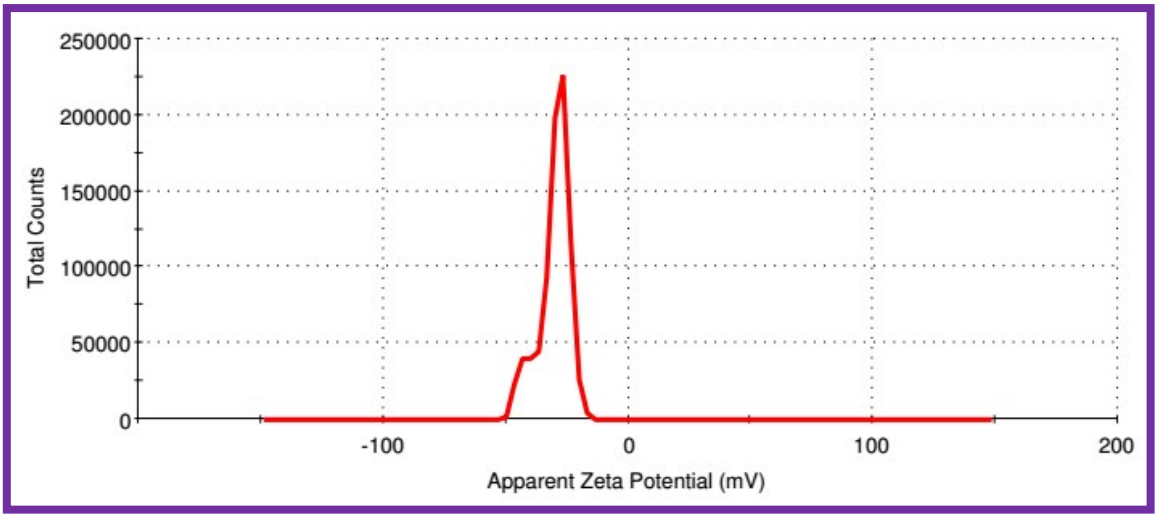

Fig. S4. Zeta potential result of β-CD AuNPs.

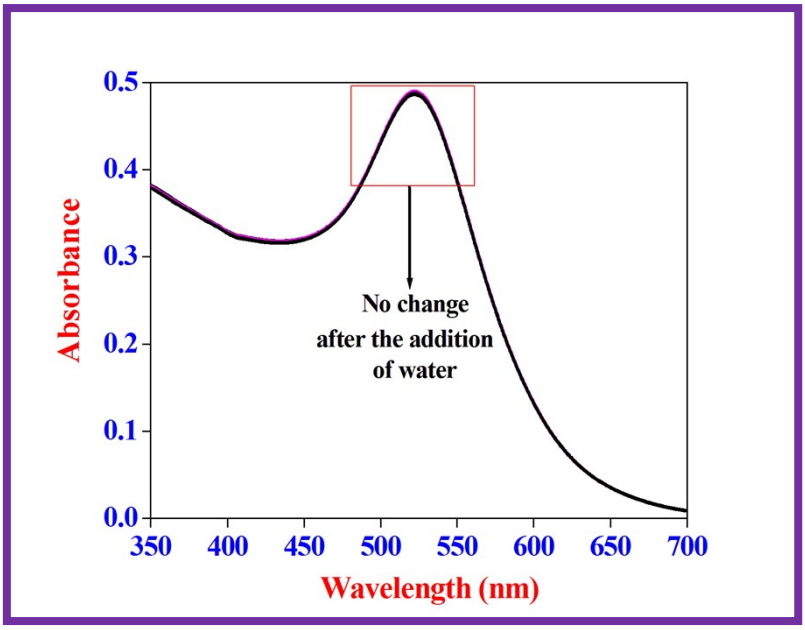

Fig. S5. Absorption spectra of β-CD AuNPs after the addition of different amounts of water.

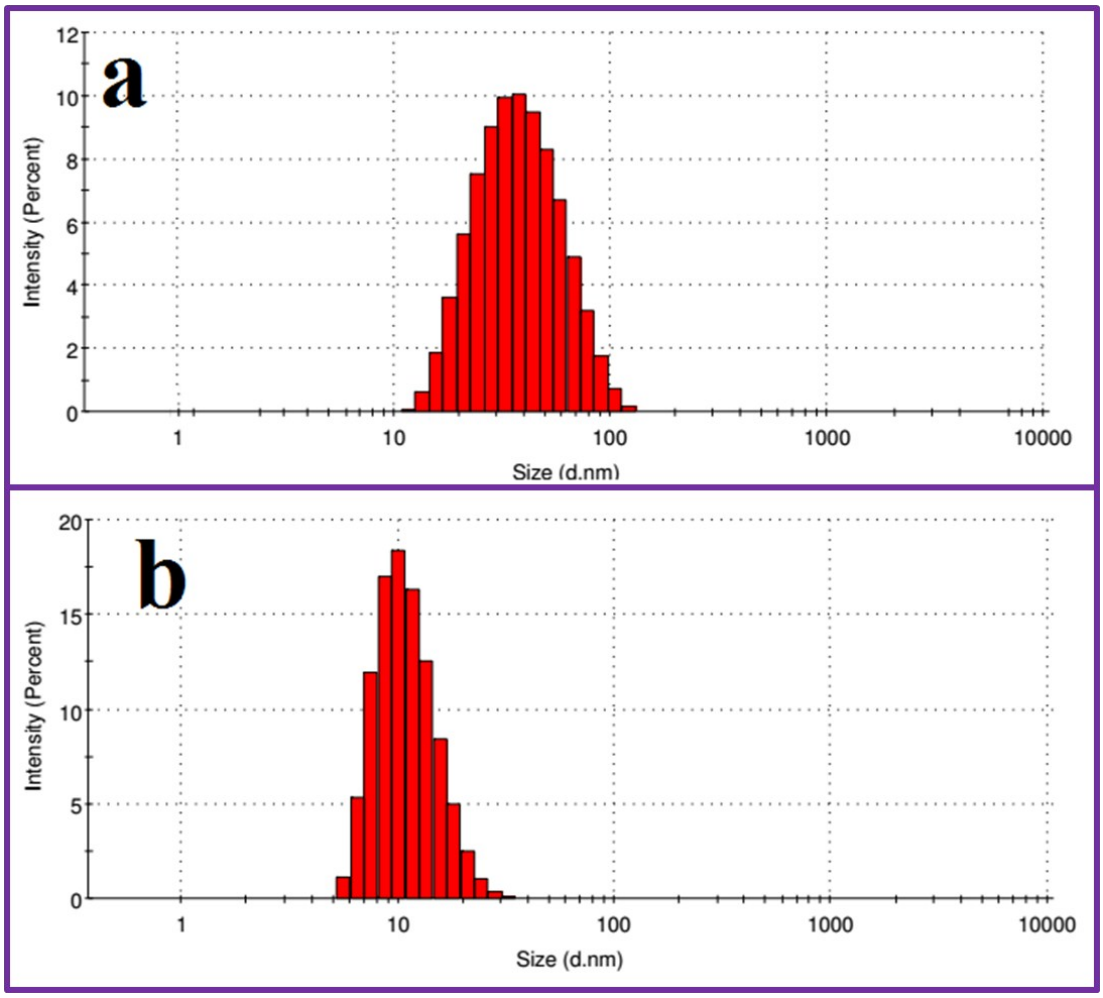

Fig. S6. DLS observations for β-CD AuNPs before and after the addition of CN^- ions.

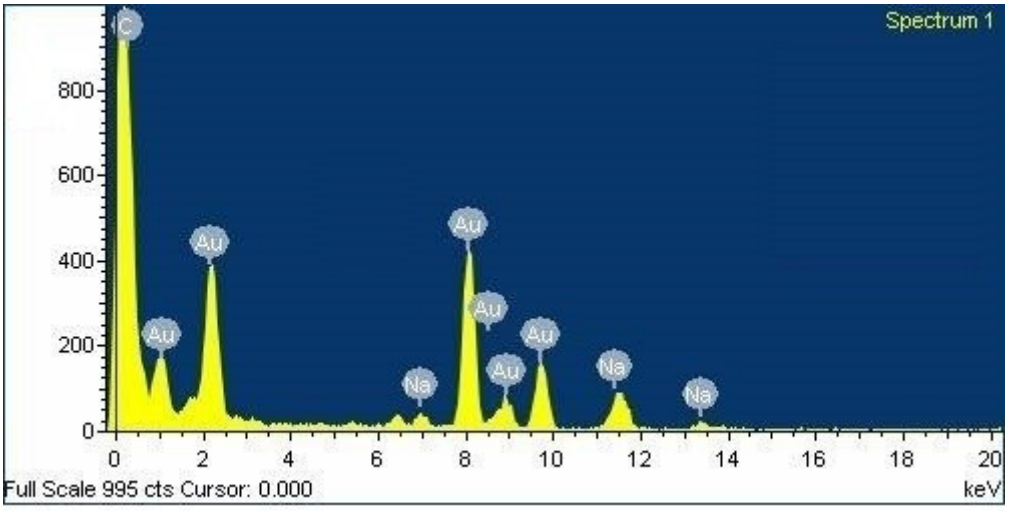

Fig. S7. EDX spectrum of β-CD AuNPs embedded cotton swab.

Table S1. Comparison of various nanomaterials based optical methods for CN^- ions with present analytical methodology.

Method	Nanoprobe	Linear range	LOD	Reference
Fluorescence	Lysozyme stabilized AuNCs	5-120 μM	0.19 μM	11
Fluorescence	Rhodamine B- adsorbed AuNPs	0.15-45 μM	80 nM	12
Fluorescence	CdSe QDs	---	1.1 μM	13
Fluorescence	Au nanodots	0.29-8.87 μM	0.15 μM	41
Fluorescence	Bovine serum albumin stabilized Ce/AuNCs	0.1-15 μM	0.05 μM	42
Fluorescence	Polymer-coated AuNPs	3-930 μM	3 μM	43
Fluorescence	OVA-AuNCs	0.5-7.5 μM	68 nM	44
Colorimetry	Ag@Au core–shell NPs	0.4-32 μM	0.18 μM	16
Colorimetry	Au@Ag core/shell NPs	8-80 μM	0.4 μM	45
Colorimetry	AgNPs	16.7-133.3 μM	1.8 μM	46
Colorimetry	AuNPs	---	14 μM	47
Colorimetry	PS20-AuNPs	0-7 μM	100 nM	48
Colorimetry	β-CD AuNPs	4.5-99 μM	93 nM	This work