Simple Colorimetric speciation of Cr (III) and Cr (VI) using Silver nanoparticle as probe.

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RESULTS

	Different Cr (III) concentrations									
pН										
	5000ppb	4000ppb	3000ppb	2000ppb	1000ppb	500ppb				
3	0.817	0.774	0.729	0.65	0.547	0.393				
4	0.702	0.712	0.52	0.63	0.42	0.302				
5	0.823	0.734	0.723	0.506	0.510	0.430				
6	0.782	0.725	0.632	0.482	0.365	0.312				

Table S1. The effect of pH on UV-vis spectroscopy measured at a range of Cr (III) concentrations [range: 5000ppb – 500ppb]

Table S2. The effect of AgNP/Cr (III) volume ratio on UV-vis spectroscopy measured at a range of Cr (III) concentrations [range: 5000ppb – 500ppb]

Volume	Volume	AgNP/Cr	Different	Different Cr (III) concentrations				
of	of Cr	(III)						
AgNP-I	(III)	volume	5000ppb	4000ppb	3000ppb	2000ppb	1000ppb	500ppb
	(µl)	ratio						
500	500	1:1	0.736	0.714	0.532	0.516	0.482	0.345
600	400		0.672	0.510	0.423	0.315	0.434	0.340
700	500		0.817	0.774	0.729	0.650	0.547	0.393
800	200		0.741	0.720	0.831	0.561	0.410	0.526

Figure S1 SEM micrograph of AgNP-II.



Figure S2 SEM micrograph of AgNP-II in the presence of 10⁻³ M Cr (III).





Figure S3 The linear correlation between the ratio of concentration of Cr (VI) vs. Absorbance at 526nm.

Figure.S4 700 μ l of 2mM NaBH₄ with 300 μ l of Cr (VI) at pH 3 is kept for pre reduction for 5minutes and 300 μ l reduced Cr (VI) and 700 μ l of AgNP-I is interacted and there was an immediate color change from yellow to red and there was an shift in spectra.





Figure.S5: 700µl of 1% citrate with 300µl of Cr (VI) at pH 3 is interacted with AgNP-I and there was no color change

Figure S6: The UV-Visible spectra of different heavy metals with AgNP-I and 10⁻³M Cr (III) interacted with AgNP-I



Figure S7 The UV-visible spectra showing the AgNP-I interacted with Mixture of Heavy metals with Cr (III) 10⁻³M solutions.

