

**Figure S1.** Average UV-visible spectra of AuNPs with average maximum absorbance at 540nm.

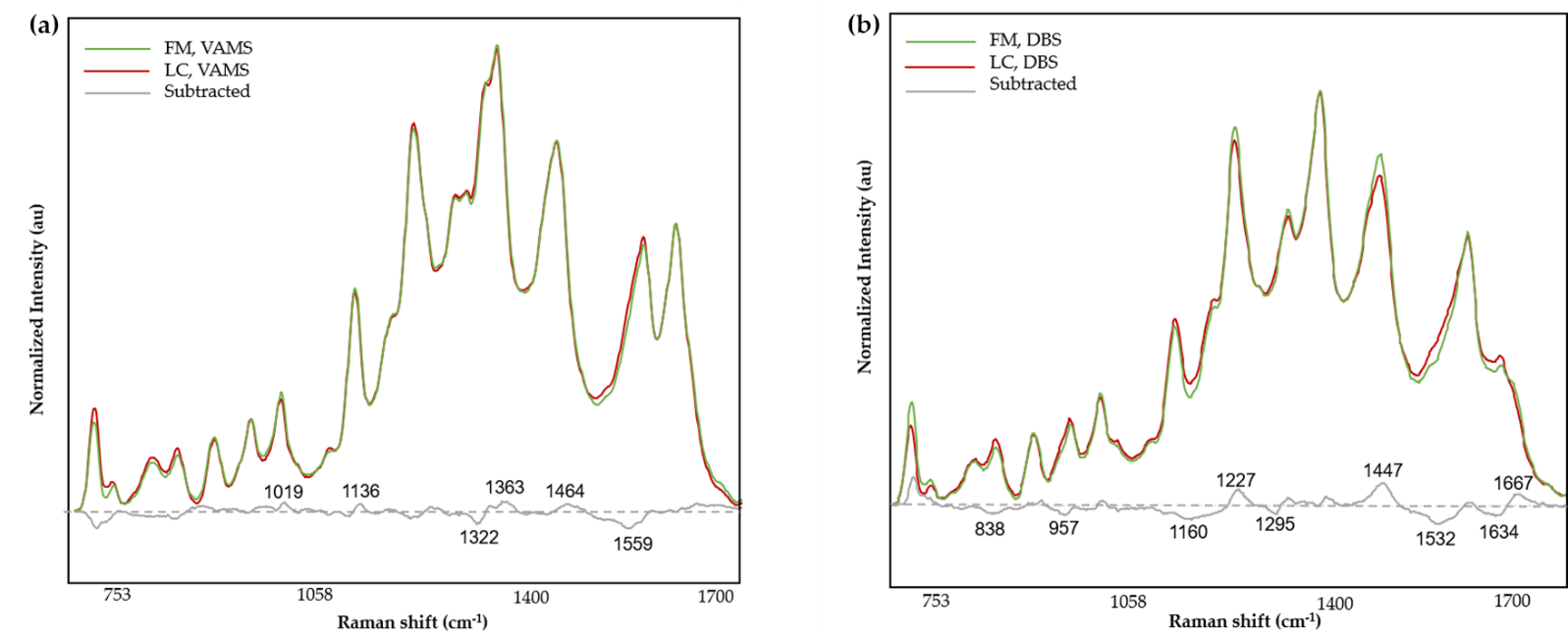
A graph of a number

Description automatically generated with medium confidence

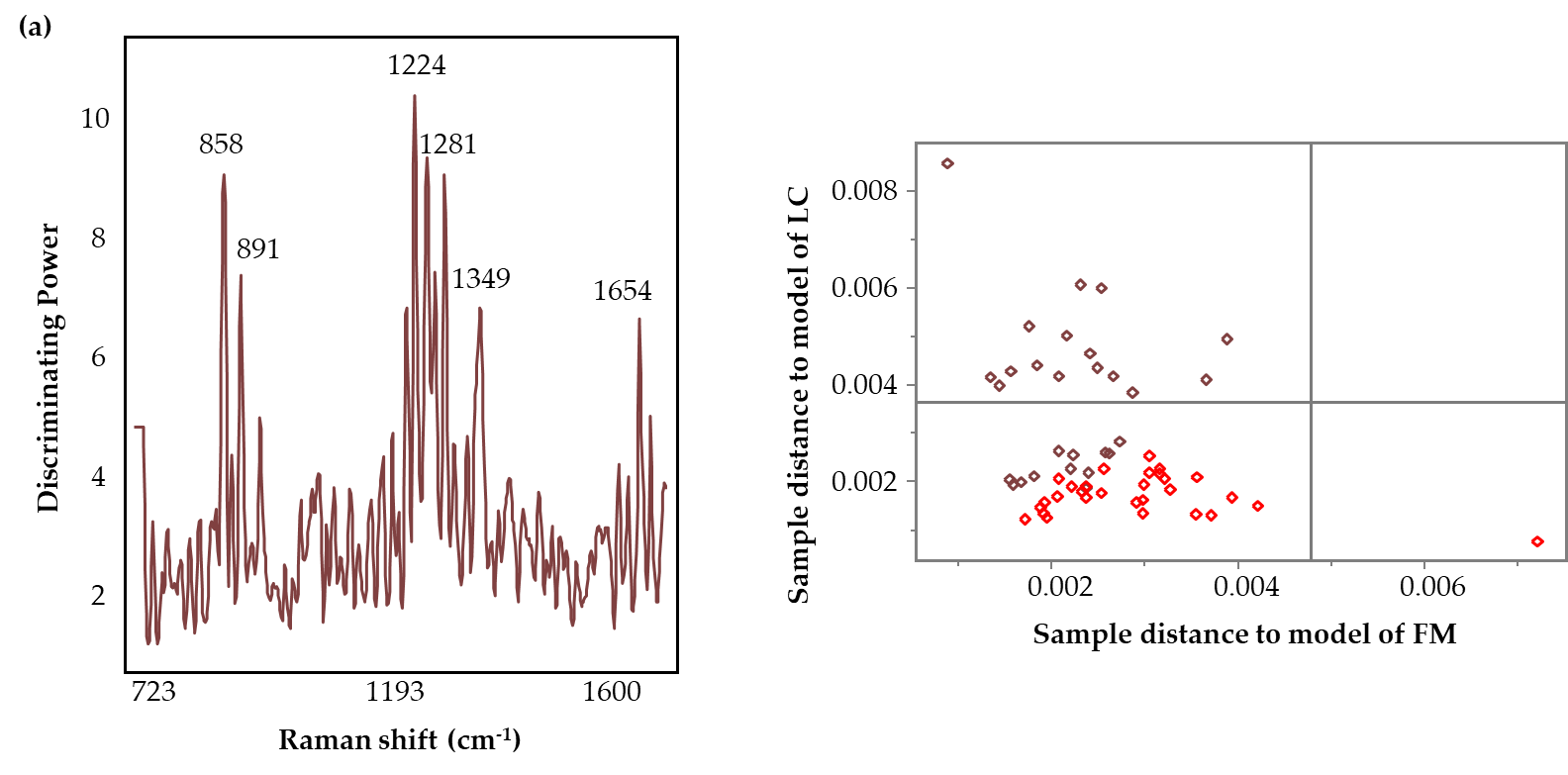
**Figure S2.** AuNPs (water and acetonitrile, 1:1)size distribution.

A graph of a number of different colored lines

Description automatically generated**Figure S3.** VAMS measurements illustrating spectral pattern consistency in FM sample regardless of signal intensity.



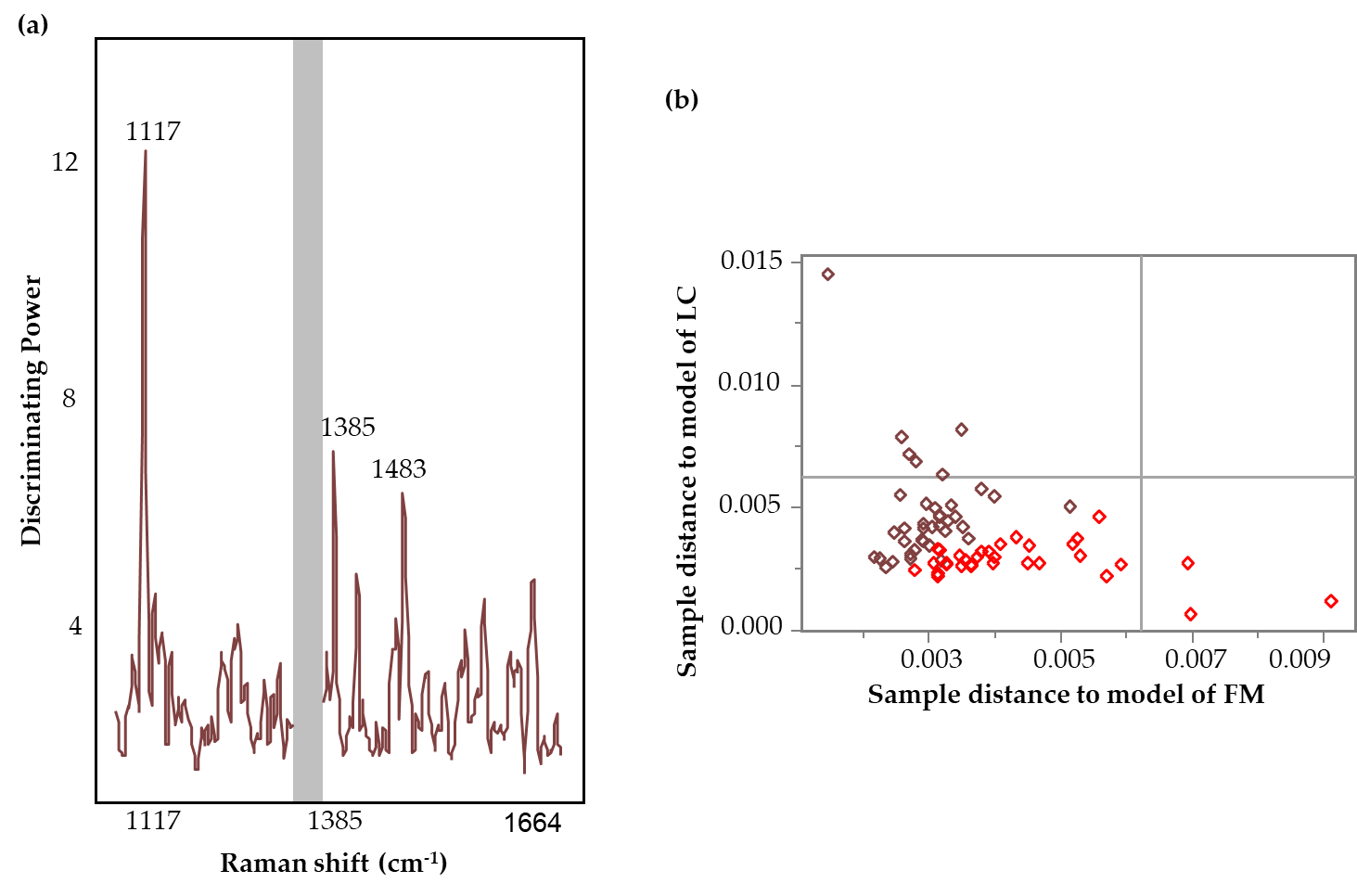
**Figure S4.** The subtracted mean spectra of LC from FM group, obtained from, **(a)** VAMS tips and **(b)** DBS cards.



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**Figure S5.** Discrimination power and Coomans plots (brown squares denote FM and red squares represent LC samples) of the SIMCA model for the full region (700-1700 cm-1) **(a)** and the amide region (1400-1700 cm-1) **(b)**, for the classification of FM and LC samples collected using VAMS tips.



**Figure S6.** Discrimination power **(a)** and Coomans plots **(b)** (brown squares denote FM and red squares represent LC samples) of the SIMCA model for the central region (1100-1330 cm-1 and 1400-1700 cm-1), for the classification of FM and LC samples collected on DBS cards.