

Electronic Supplementary Material

Tunable lipid coated nanoporous silver sheet for characterization of protein-membrane interactions by surface-enhanced Raman scattering (SERS)

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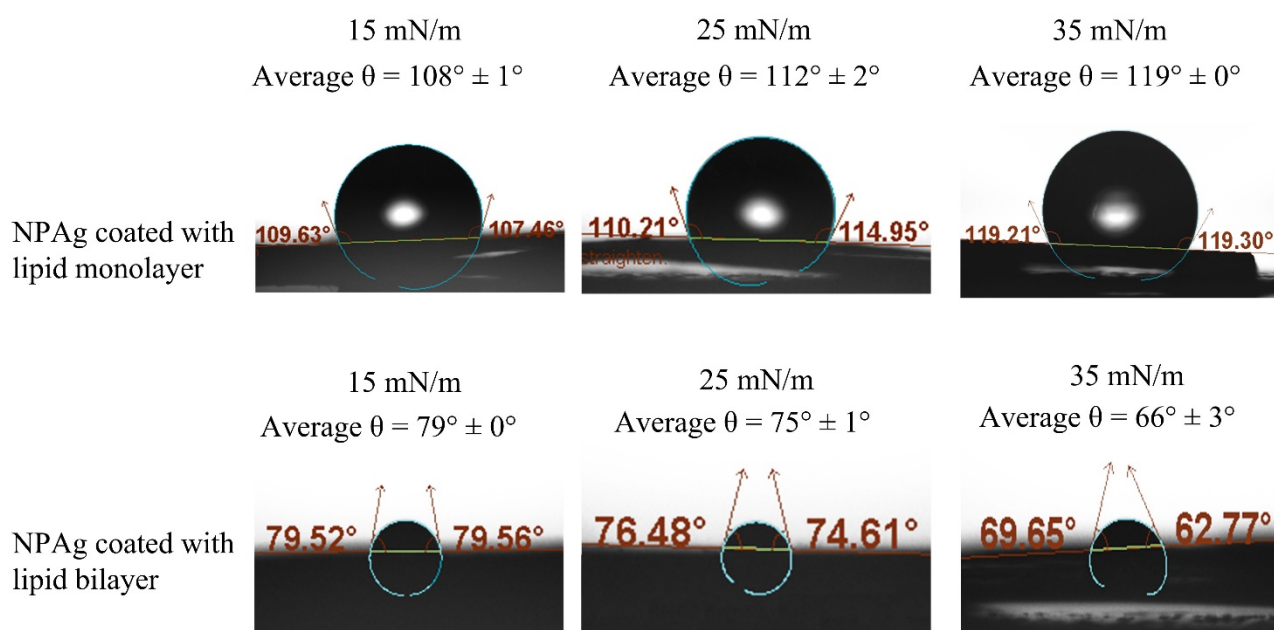


Fig. S1 Contact angles of water on the monolayer lipid-coated NPAg sheets under the surface pressure of 15 mN/m, 25 mN/m, and 35 mN/m (top) and the bilayer lipid-coated NPAg sheets under the surface pressure of 15 mN/m, 25 mN/m, and 35 mN/m (bottom).

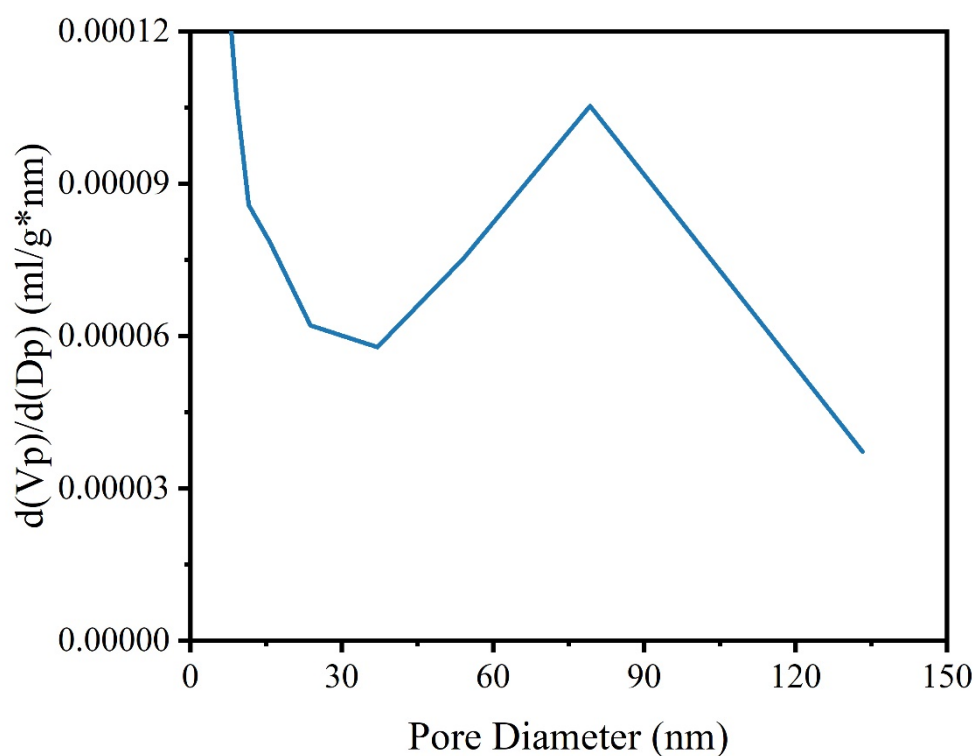


Fig. S2 BET analysis of nanoporous silver sheet

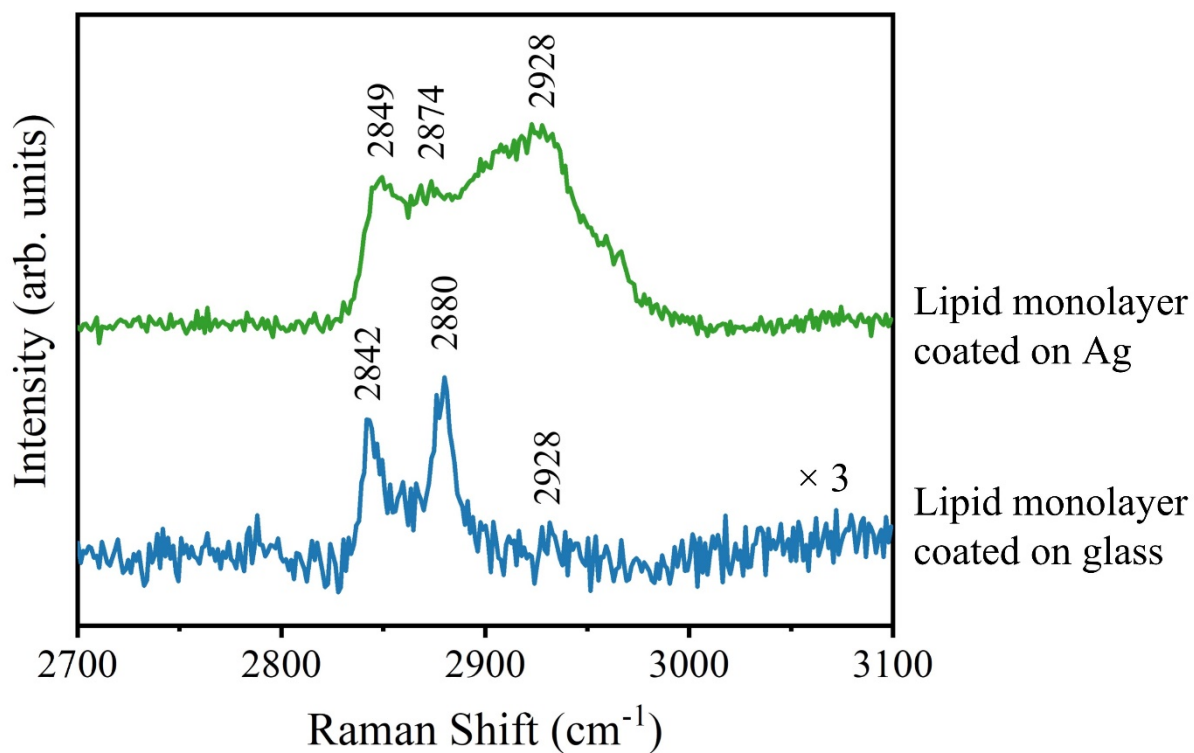


Fig. S3 Raman spectra of the lipid monolayer coated on the glass slide (blue) and the lipid monolayer coated on the Ag substrate (green).

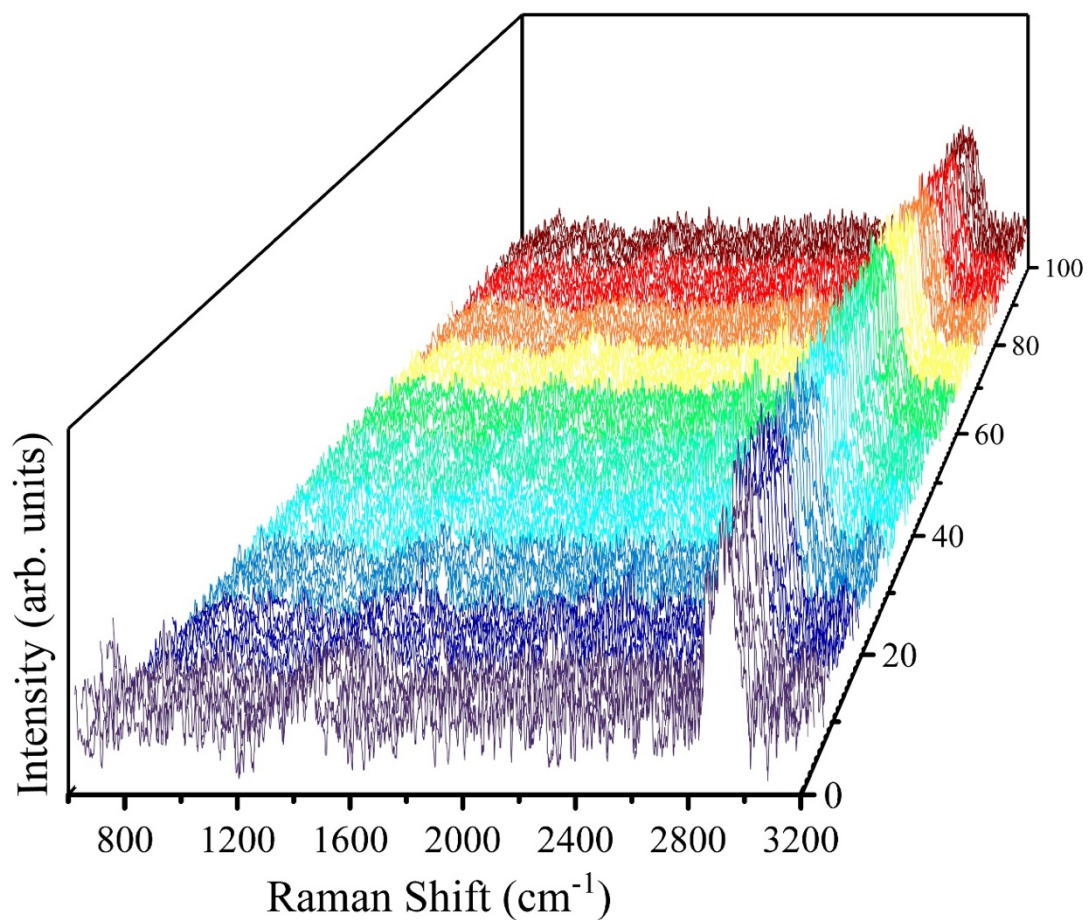


Fig. S4 SERS spectra of lipid-coated nanoporous silver sheet at 100 different spots.

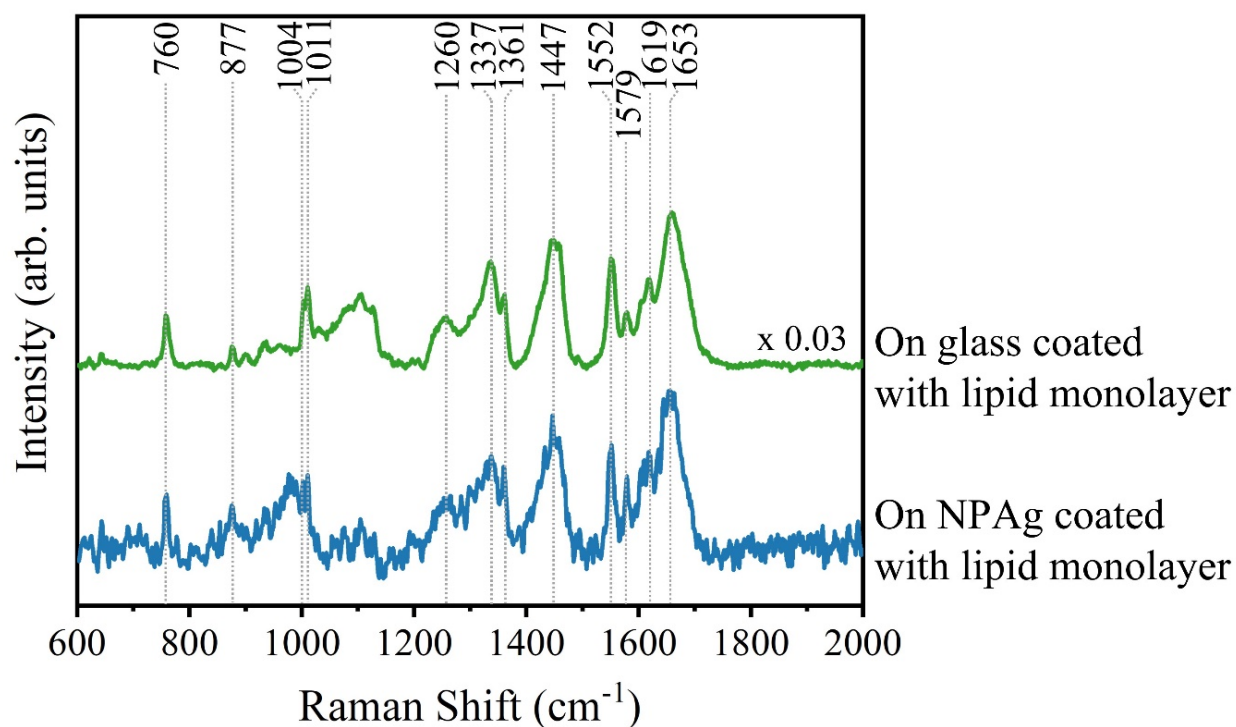


Fig. S5 Spontaneous Raman spectrum of 1 mM lysozyme on the lipid-coated glass slide (green) and SERS spectrum of 1 μM lysozyme on the lipid-coated NPAg sheet (blue).

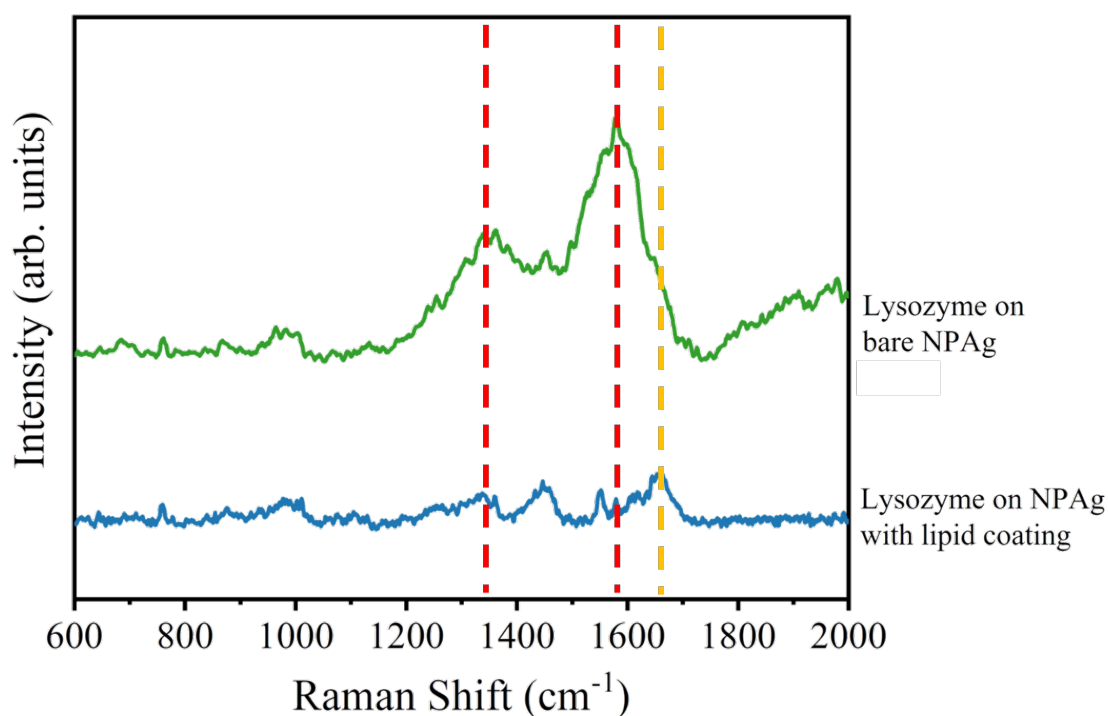


Fig. S6 SERS spectrum of 1 μM lysozyme on bare nanoporous silver sheet (green) and lipid-coated nanoporous silver sheet (blue).

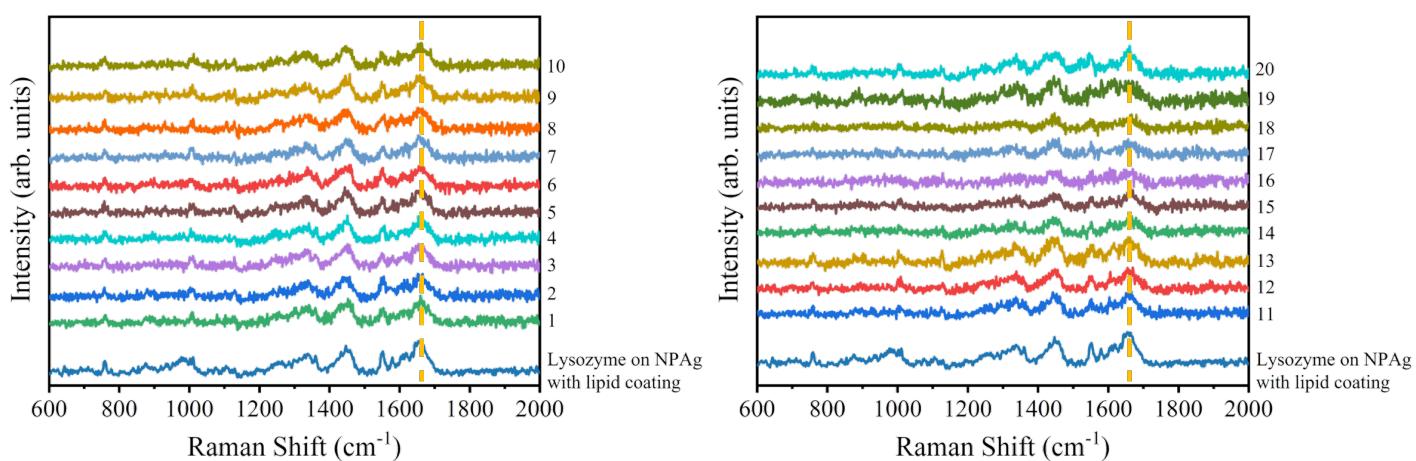


Fig. S7 SERS spectra of lysozyme on lipid-coated nanoporous silver sheet at 20 different spots.

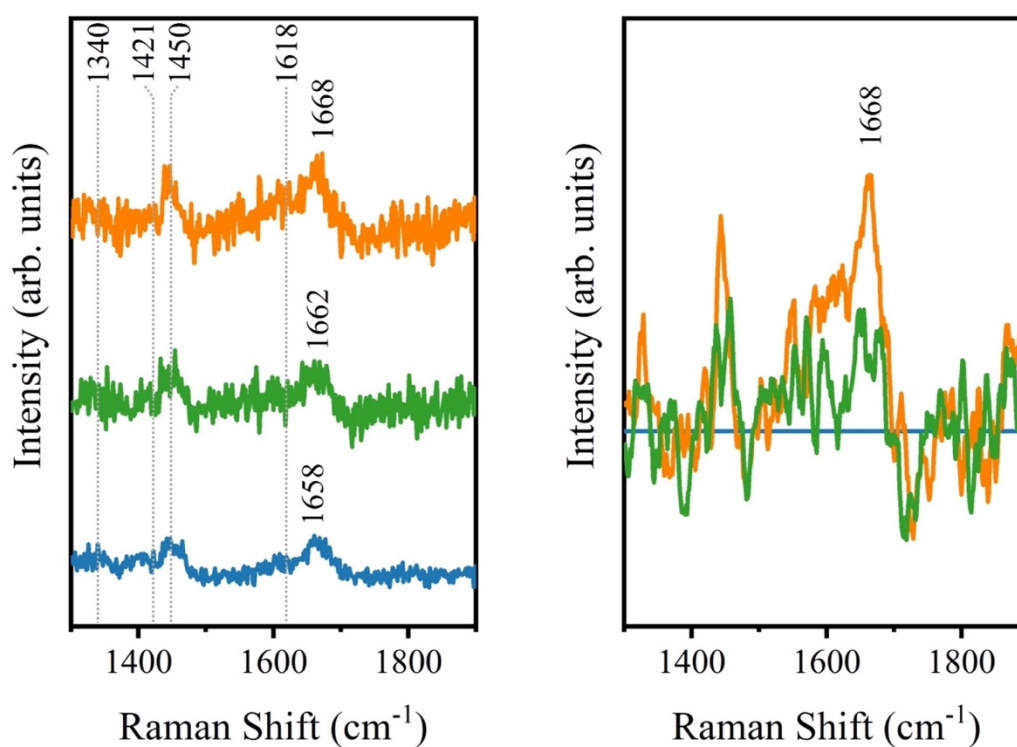


Fig. S8 SERS spectra and difference spectra of 1 μ M alpha-synuclein on the lipid-deposited NPAg sheets with lipid bilayer coating under the surface pressures of 35 mN/m, 25 mN/m, and 15 mN/m, respectively.

Table S1 Main peak assignment of lysozyme ^[1, 2]

Raman Shift (cm ⁻¹)	Tentative Assignment
760	Trp
877	Trp
1004	Phe
1011	Trp
1260	Amide III
1337	Trp
1361	Trp
1447	C-H bending
1552	Trp
1579	Trp/Phe
1619	Trp
1653	Amide I

Table S2 Main peak assignment of alpha-synuclein ^[3]

Raman Shift (cm ⁻¹)	Tentative Assignment
1003	Phe
1240	Amide III (β -sheet)
1248	Amide III (random coil)
1290	Amide III (α -helical)
1340	CH ₂ deformation
1421	CH ₂ , CH ₃ deformation
1450	CH ₂ , CH ₃ deformation
1618	Tyr
1658	Amide I (α -helical)
1668	Amide I (β -sheet)
1674	Amide I (random coil)

References

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