Supplementary Materials: Iron Gall Ink Revisited: A Surfactant-Free Emulsion Technology for Black Hair-Dyeing Formulation

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Figure S1. Optical photographs of the emulsions with argan oil, olive oil, sunflower oil, grape seed oil, hemp seed oil, peppermint oil, rosemary oil, and ylang-ylang oil.

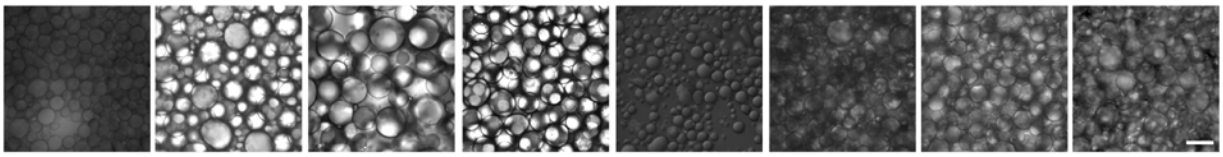

Figure S2. Optical photographs of the emulsions with argan oil, olive oil, sunflower oil, grape seed oil, hemp seed oil, peppermint oil, rosemary oil, and ylang-ylang oil. Scale bar: 10 μm.

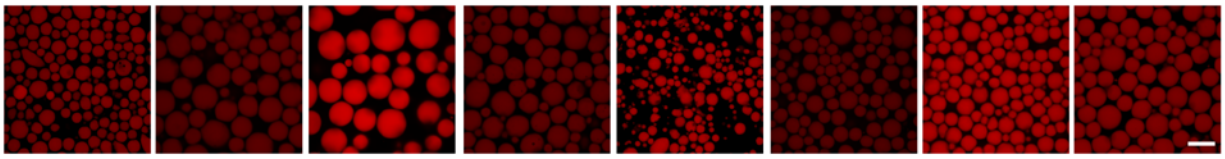

Figure S3. CLSM images of the emulsions with argan oil, olive oil, sunflower oil, grape seed oil, hemp seed oil, peppermint oil, rosemary oil, and ylang-ylang oil. Nile Red was used as an oil marker. Scale bar: 10 μm.

Figure S4. Optical photographs of the hair samples after dyeing with the emulsion having argan oil, olive oil, sunflower oil, grape seed oil, hemp seed oil, peppermint oil, rosemary oil, and ylang-ylang oil.

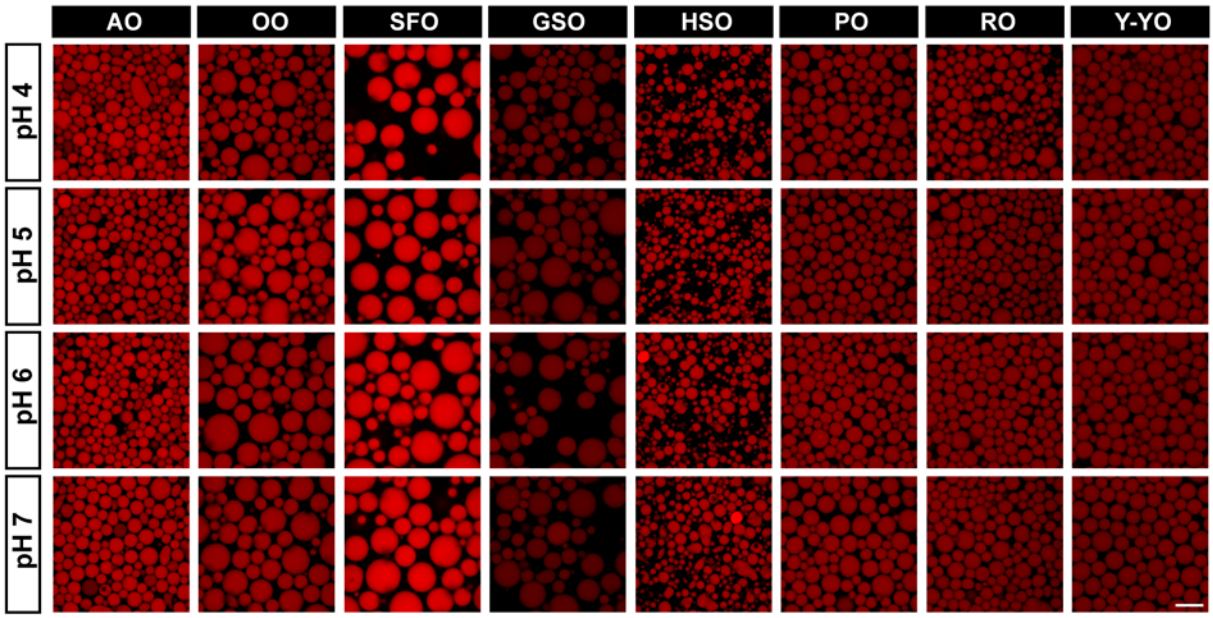

Figure S5. CLSM images of the emulsions, having argan oil (AO), olive oil (OO), sunflower oil (SFO), grape seed oil (GSO), hemp seed oil (HSO), peppermint oil (PO), rosemary oil (RO), and ylang-ylang oil (Y-YO), at various pH values (pH: 4,5, 6, and 7). The initial pH values of the emulsions are 3.41 for AO, 3.55 for OO, 3.46 for SFO, 3.50 for GSO, 3.57 for HSO, 3.43 for PO, 3.45 for RO, and 3.43 for Y-YO, respectively. Nile Red was used as an oil marker. Scale bar: 10 µm.