Supporting Information

A Model Eumelanin from 5,6-Dihydroxyindole-2-Carboxybutanamide Combining Remarkable Antioxidant and Photoprotective Properties with a Favourable Solubility Profile for Dermo-Cosmetic Applications

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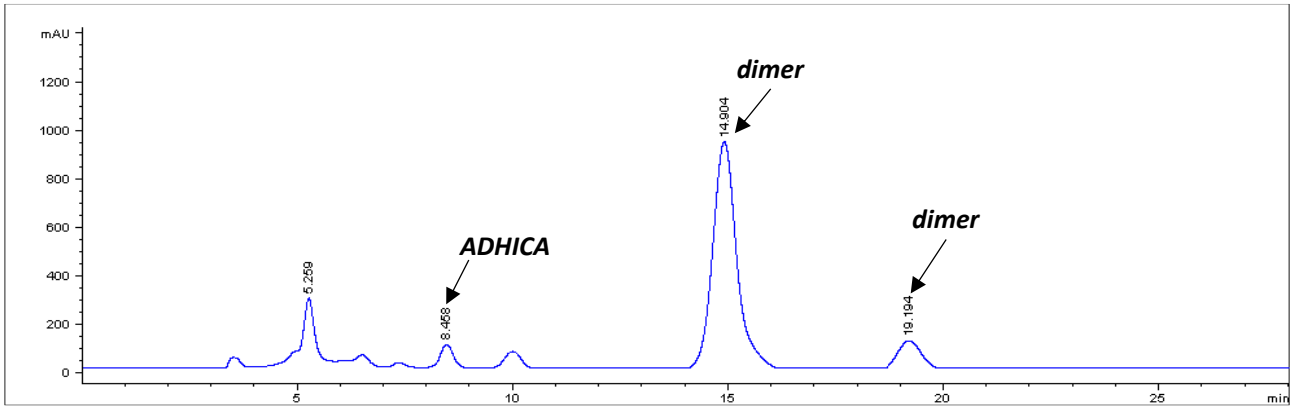

Figure S1. HPLC profile of acetylated ADHICA oxidation mixture in the presence of Cu^{2+}.

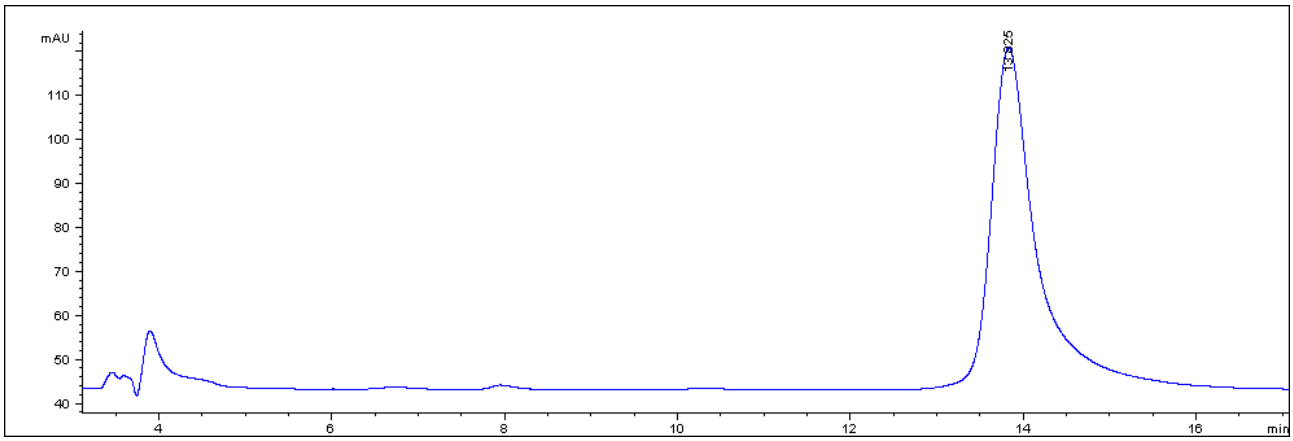

Figure S2. HPLC profile of the main product of ADHICA oxidation after purification by preparative HPLC.

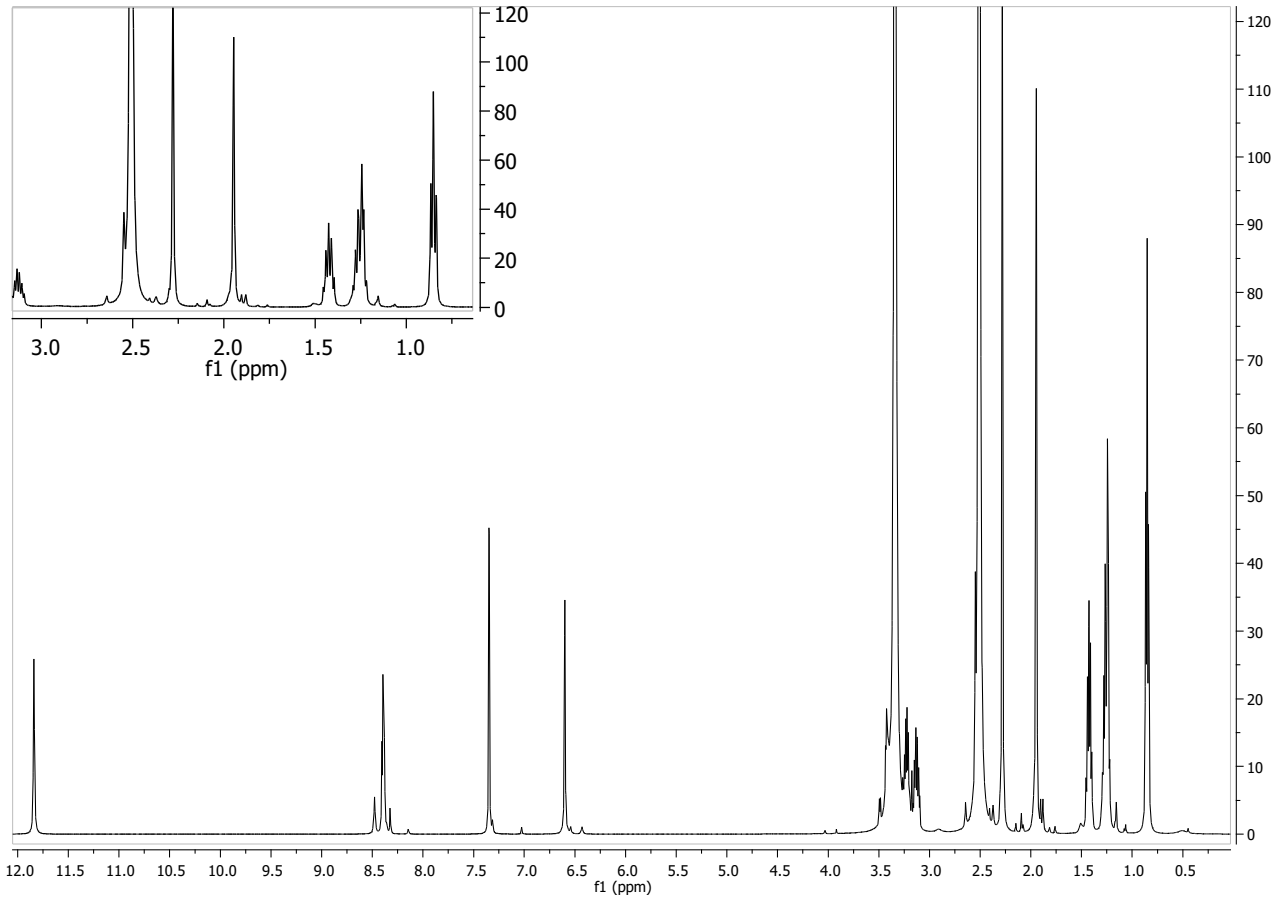

Figure S3. ^{1}H-NMR spectrum of acetylated ADHICA 4,4-dimer (DMSO-d_6).

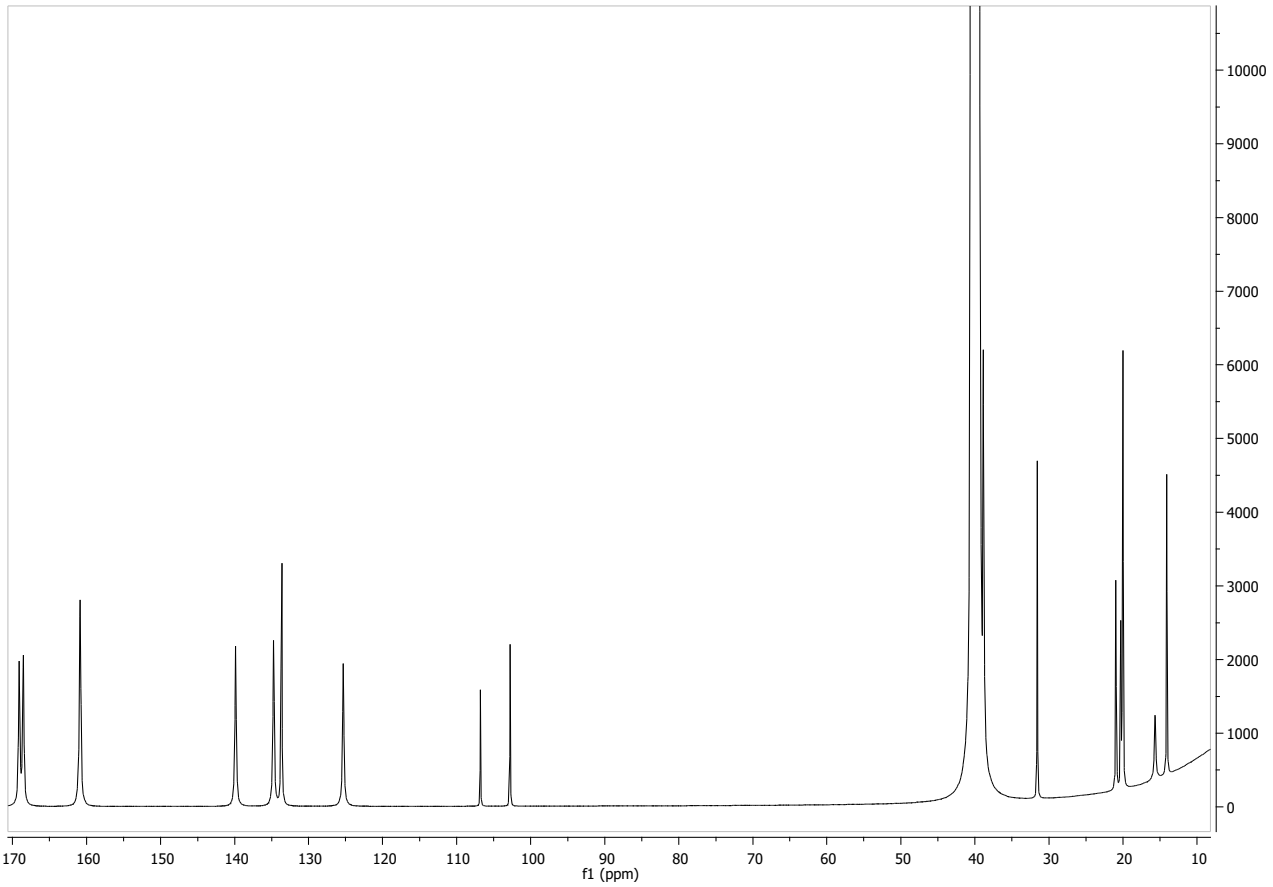

Figure S4. ^{13}C-NMR spectrum of acetylated ADHICA 4,4'-dimer (DMSO-d_6).

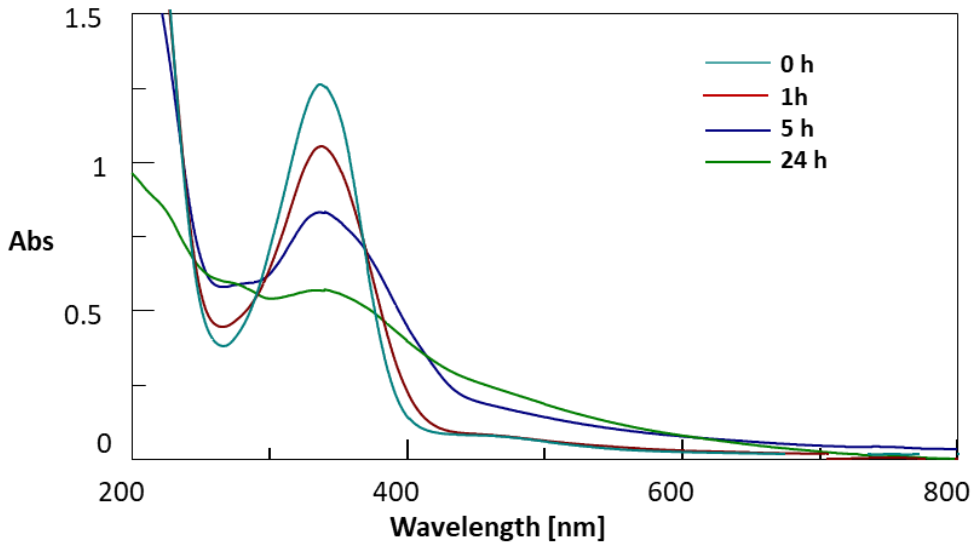

Figure S5. UV-Vis spectra of the aerobic oxidation mixture of 1 mM ADHICA in carbonate buffer at pH 9.0 at different reaction times.

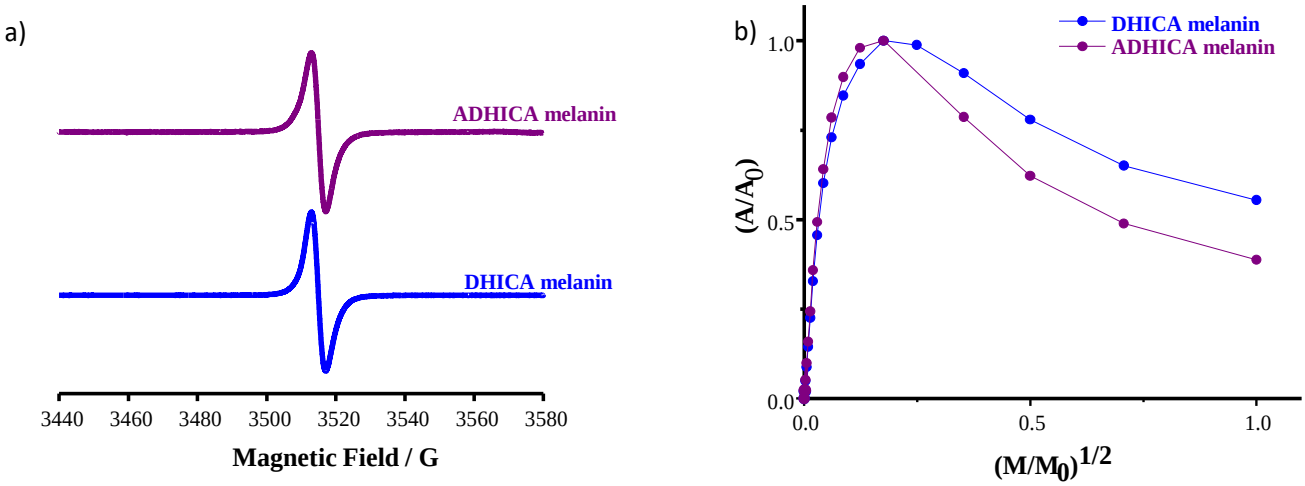

Figure S6. a) Solid state EPR spectra and **b**) power saturation profiles of DHICA and ADHICA melanin.

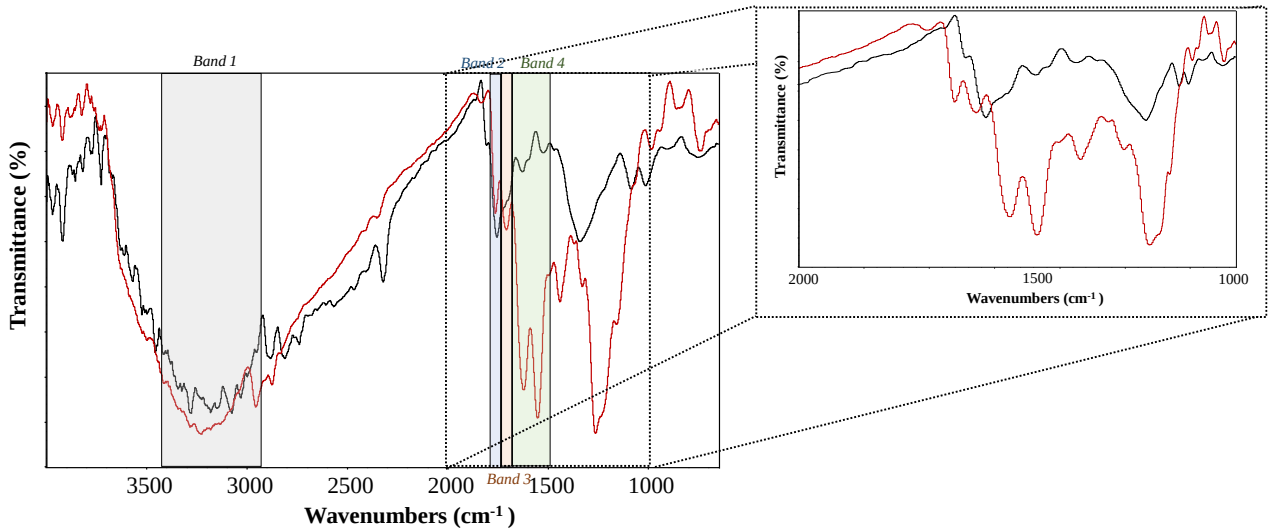

Figure S7. FTIR-ATR spectra of **ADHICA** (red line) and **DHICA** (black line) melanin.

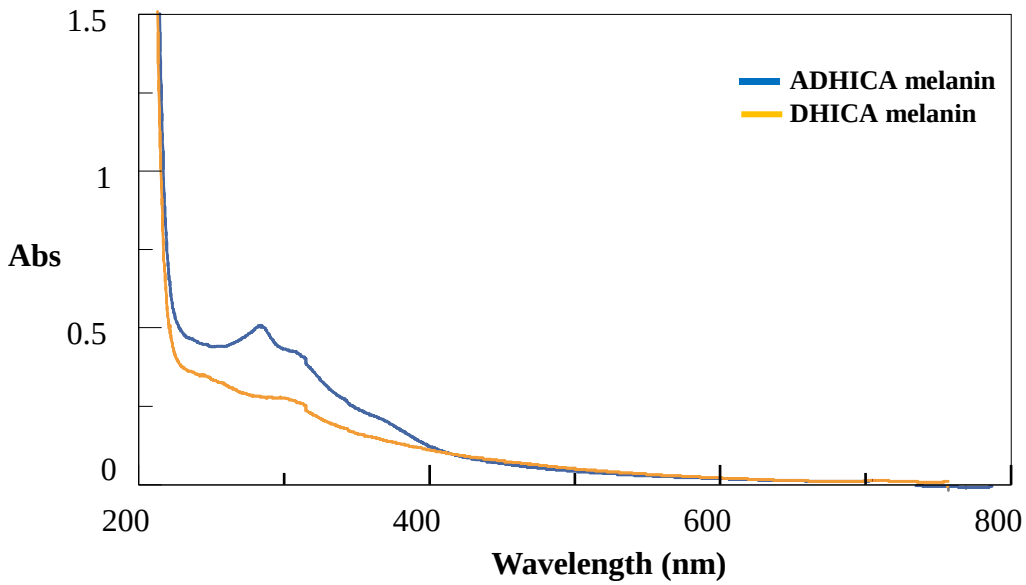

Figure S8. UV-Vis spectrum of ADHICA and DHICA melanin at 0.01 mg/mL in methanol.

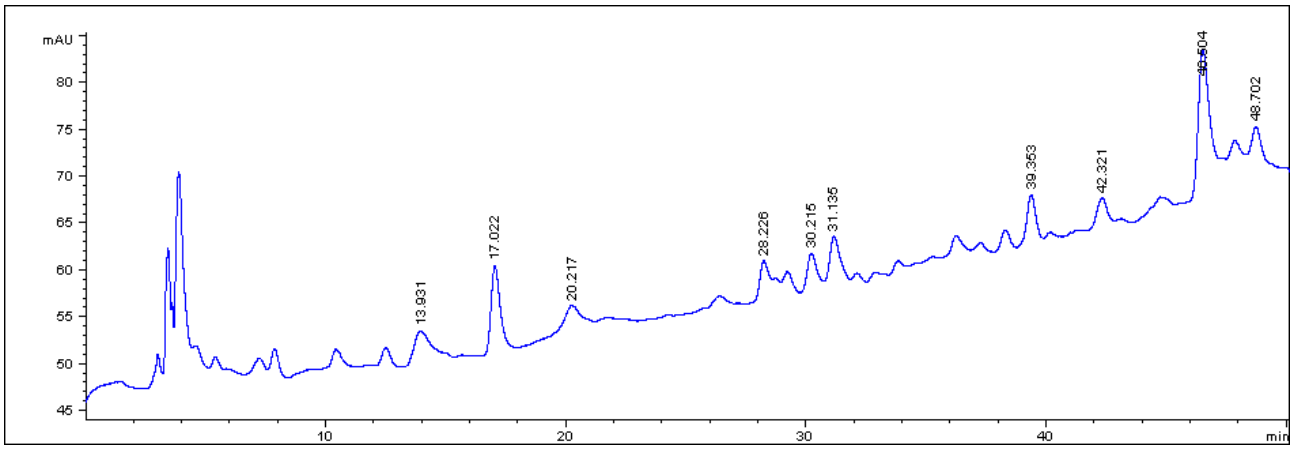

Figure S9. HPLC profile of the ADHICA melanin at 1mg/mL in DMSO. Detection wavelength at 300 nm.

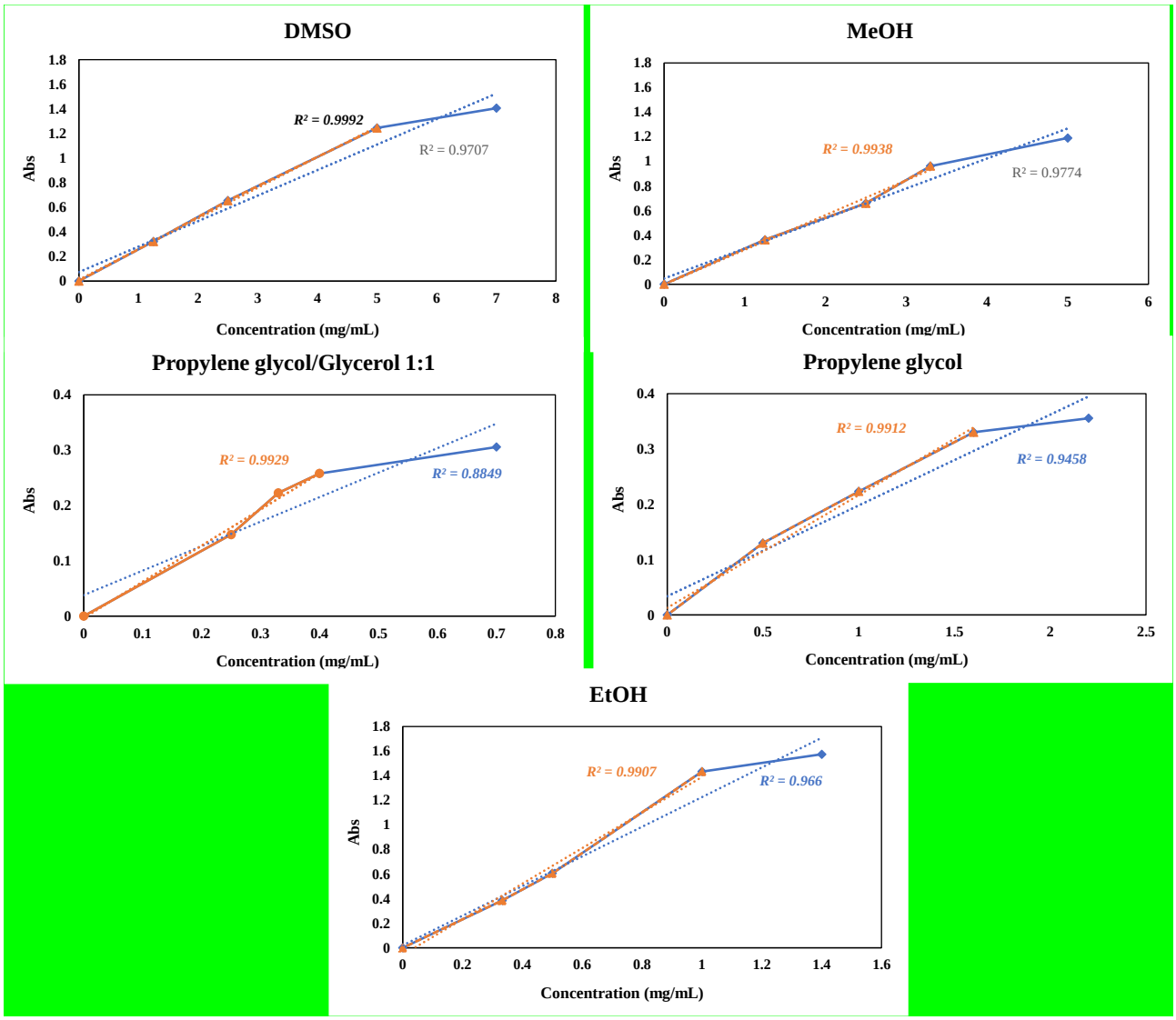

Figure S10. Absorbance versus concentration plots for ADHICA melanin in various solvents. Correlation coefficients for linearity fitting among different data points **Orange line** ($R^2 > 0.99$), **Blu line** ($R^2 < 0.99$).