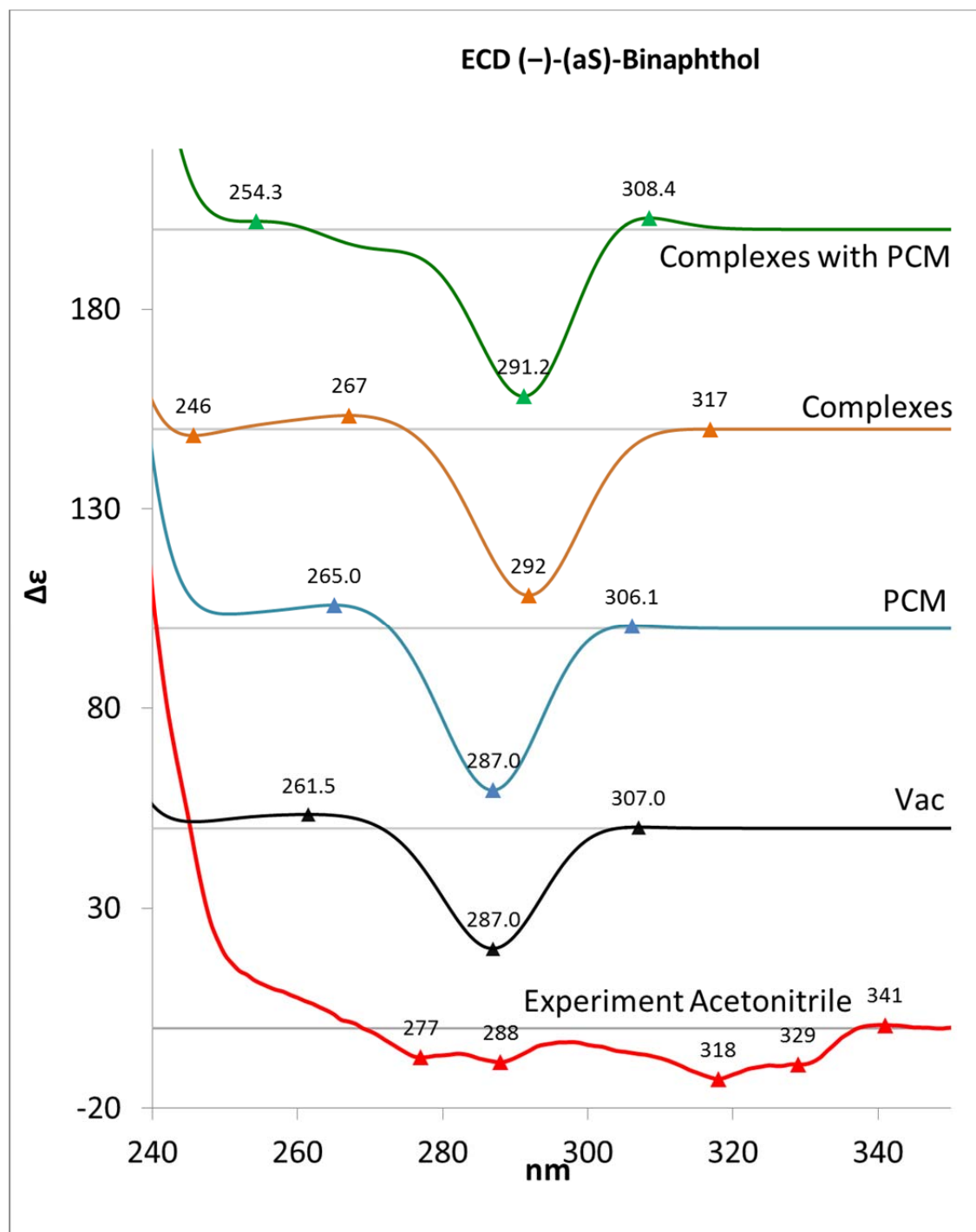


Supplementary Information

Figure S1:

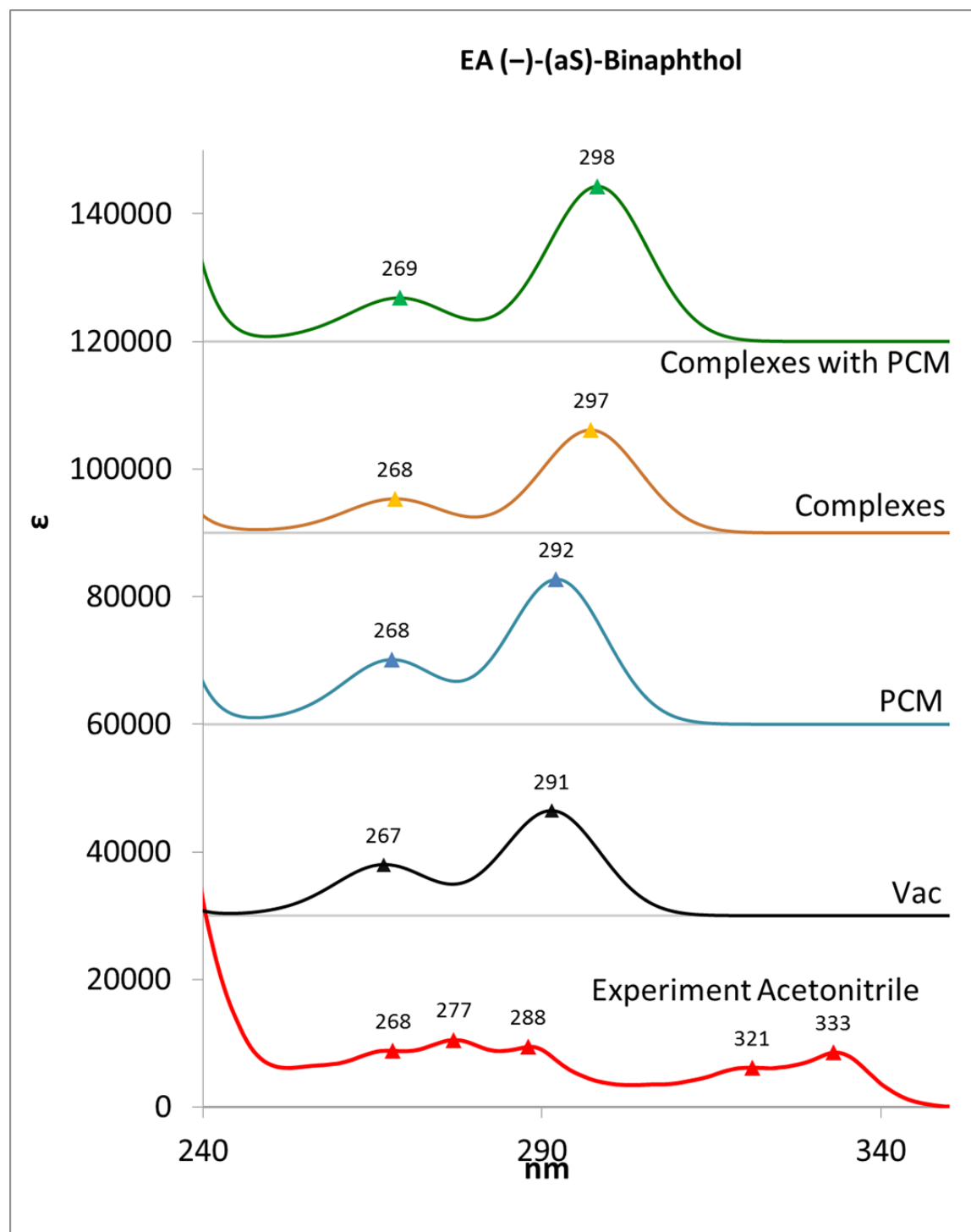
A) ECD comparison of (aS)-BN 240-350 nm

Experiment and calculated at CAM-B3lyp/aug-cc-pVDZ with various models of solvation



B) EA comparison of (aS)-BN 240-350 nm

Experiment and calculated at CAM-B3lyp/aug-cc-pVDZ with various models of solvation



C) EDF comparison of (aS)-BN 220-350 nm

Experiment and calculated at CAM-B3lyp/aug-cc-pVDZ with various models of solvation

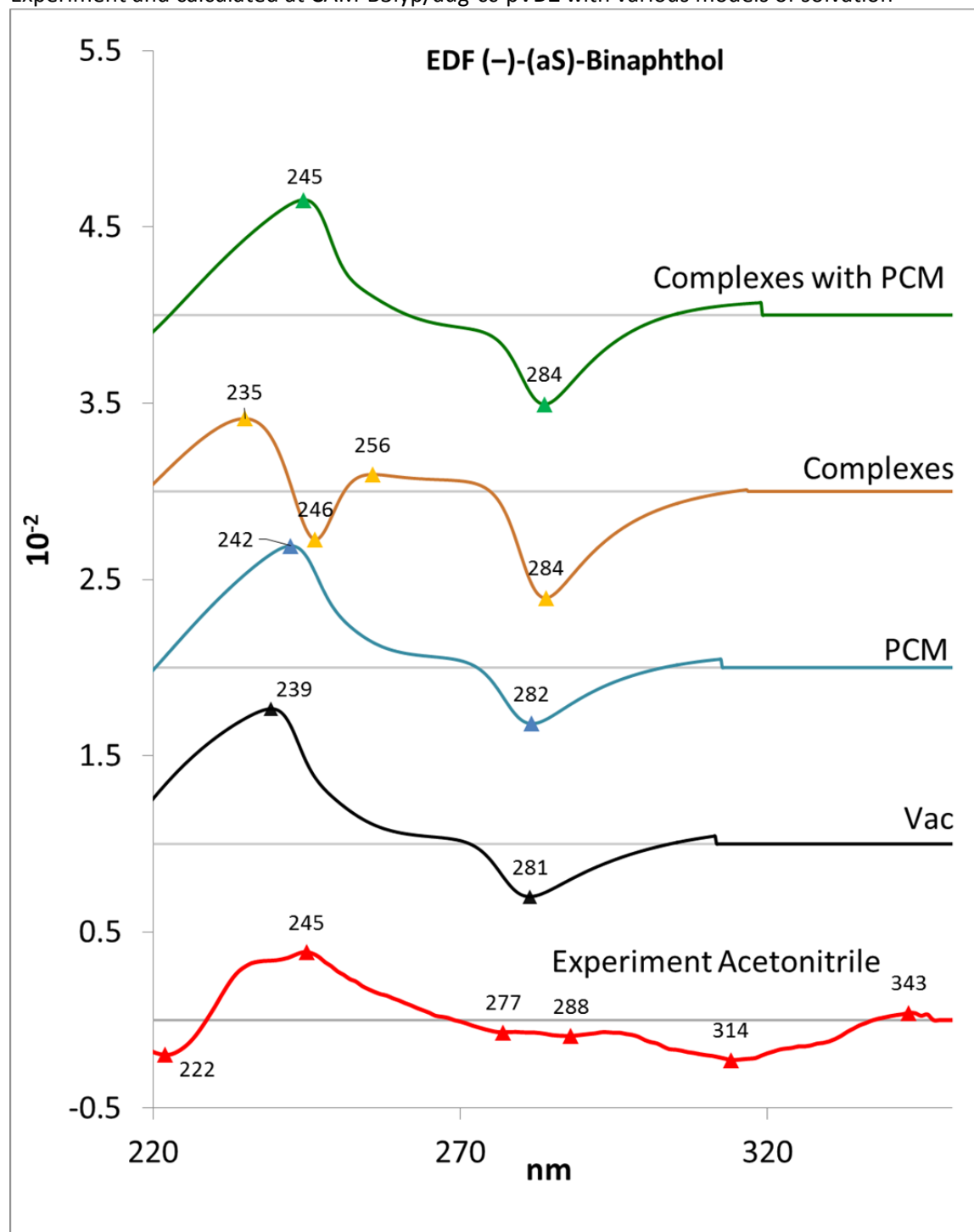


Figure S2: experimental EDF for (R) and (S) Binaphthol

(R) and (S) show the mirror image relation necessary for chiral compounds. Here (S) was measured in 2 different cells and pieced together near 237 nm while (R) was measured only in a 0.1 mm cell.

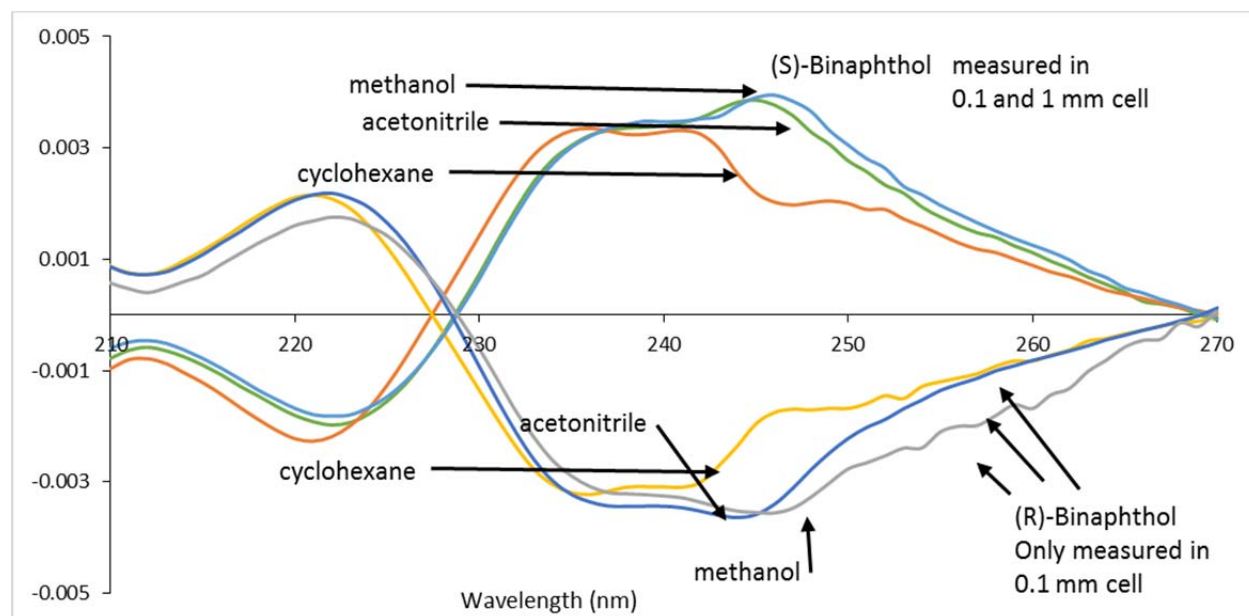


Figure S3: EDF of (aS)-BN in cyclohexane at 0.75 mg/ml (red) and 0.37 mg/ml (black)

0.75 mg/ml = 0.00262 M

0.37 mg/ml = 0.00129 M

Minor differences are thought to come from error in absorption and CD from the instrument.

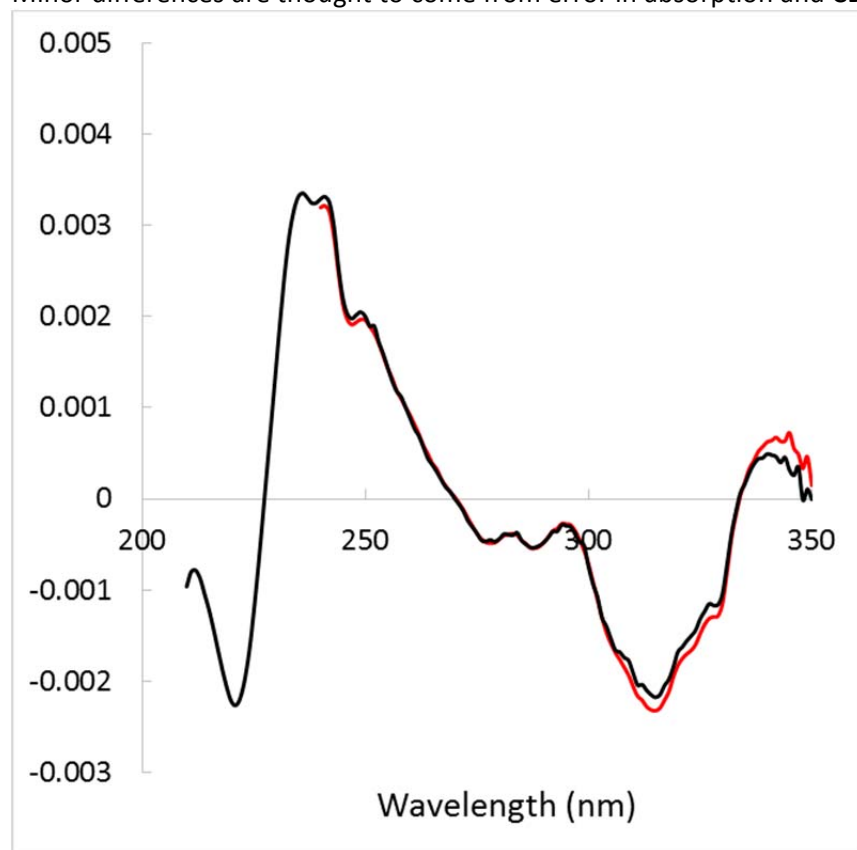
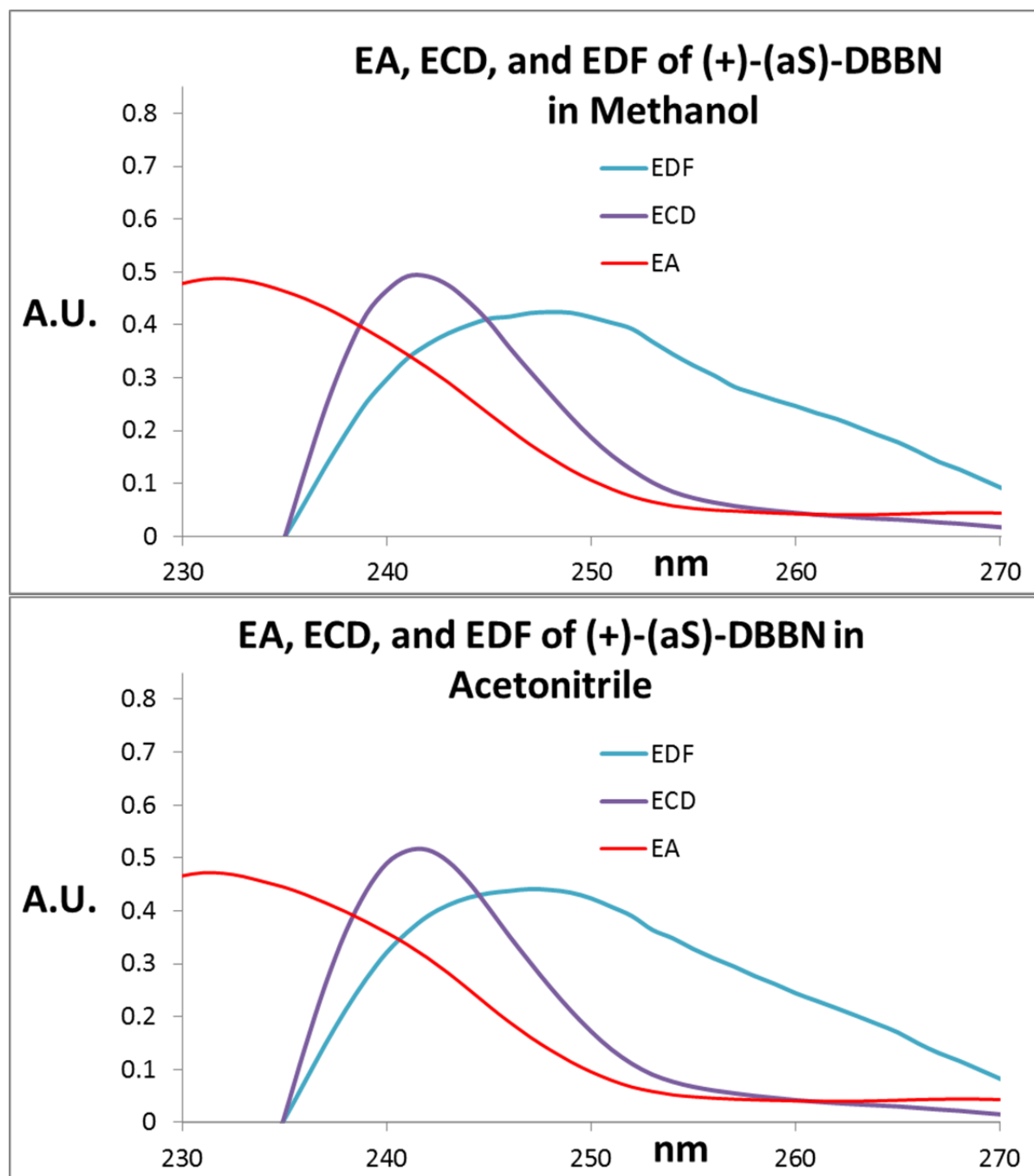


Figure S4: Experimental EA, ECD, and EDF spectra all shown together (arbitrary y-axis scaling) for DBBN 230-270 nm.



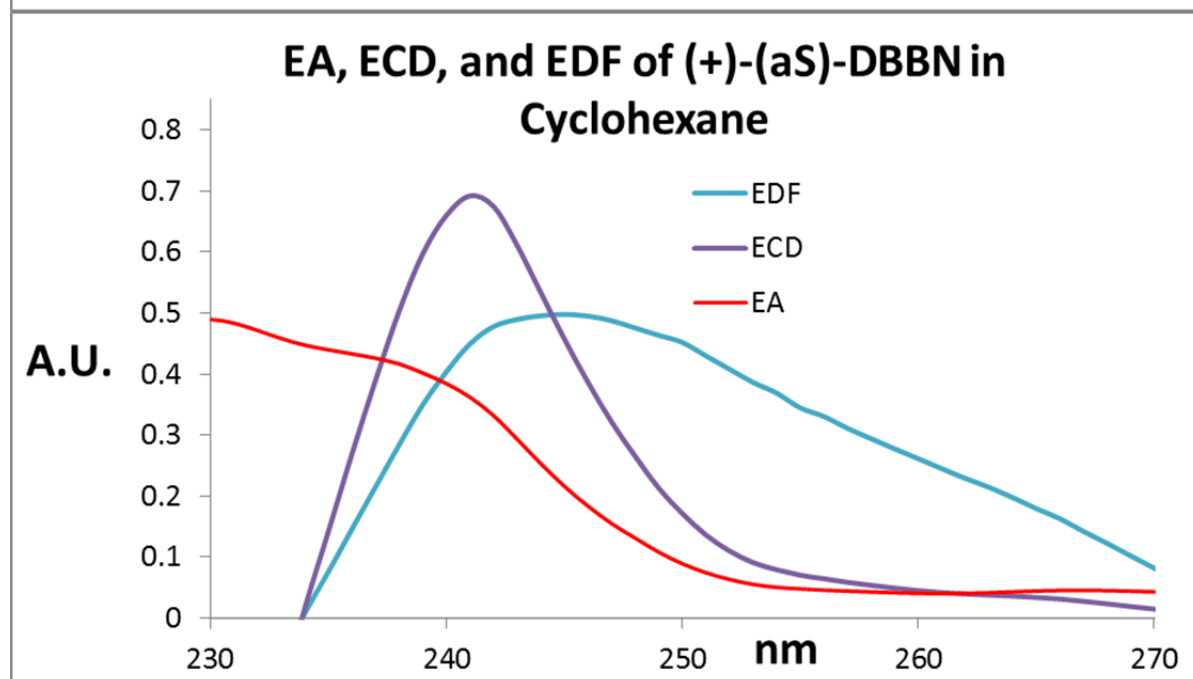
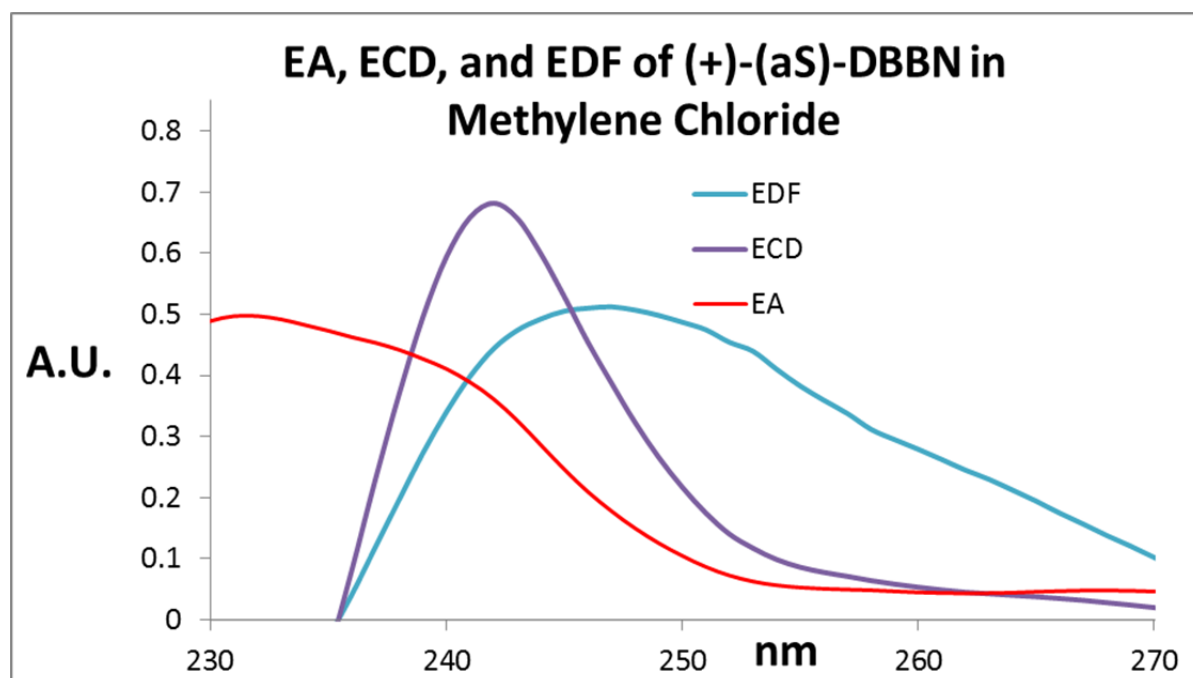
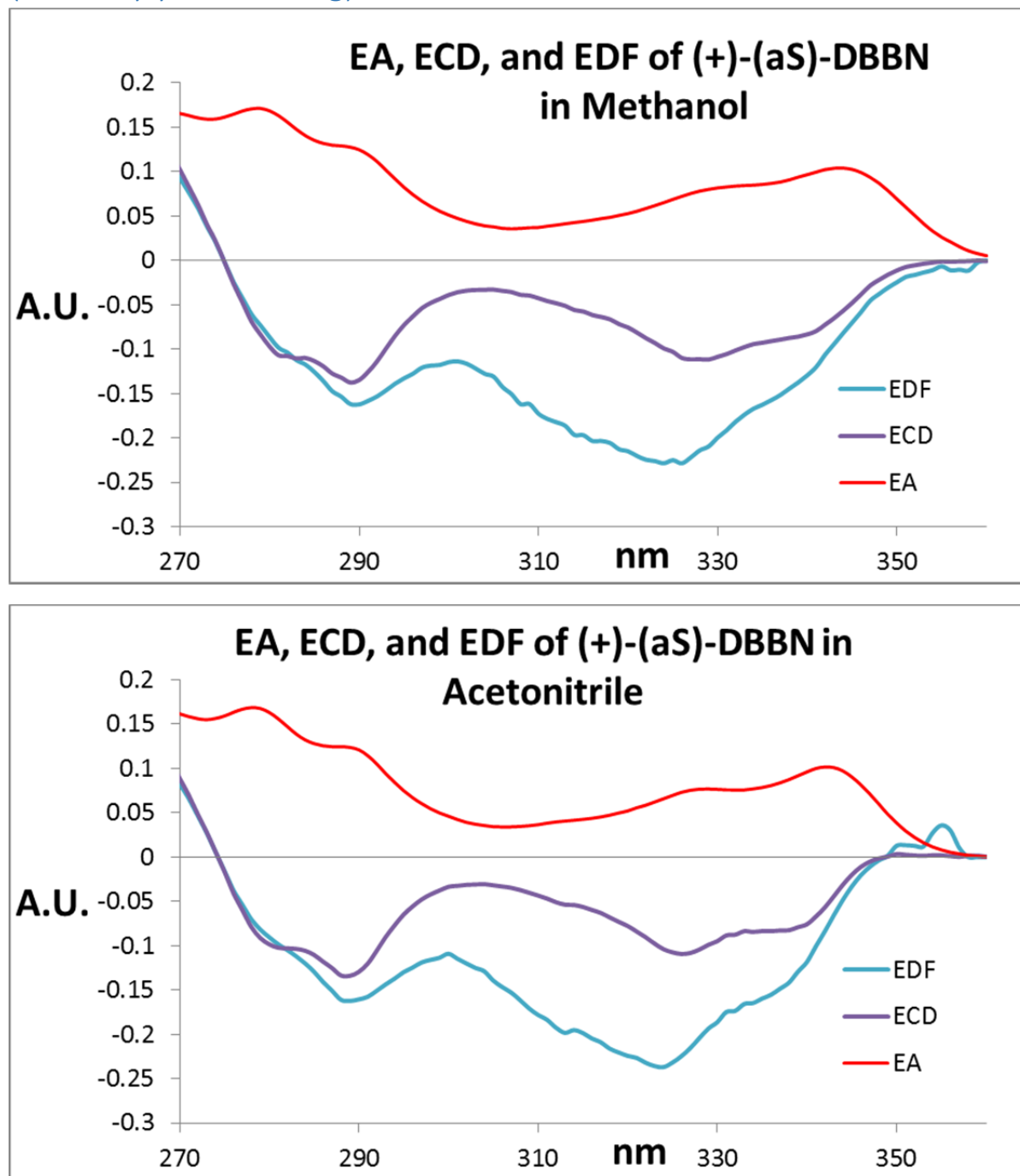


Figure S5: Experimental EA, ECD, and EDF spectra all shown together (arbitrary y-axis scaling) for DBBN 270-360 nm.



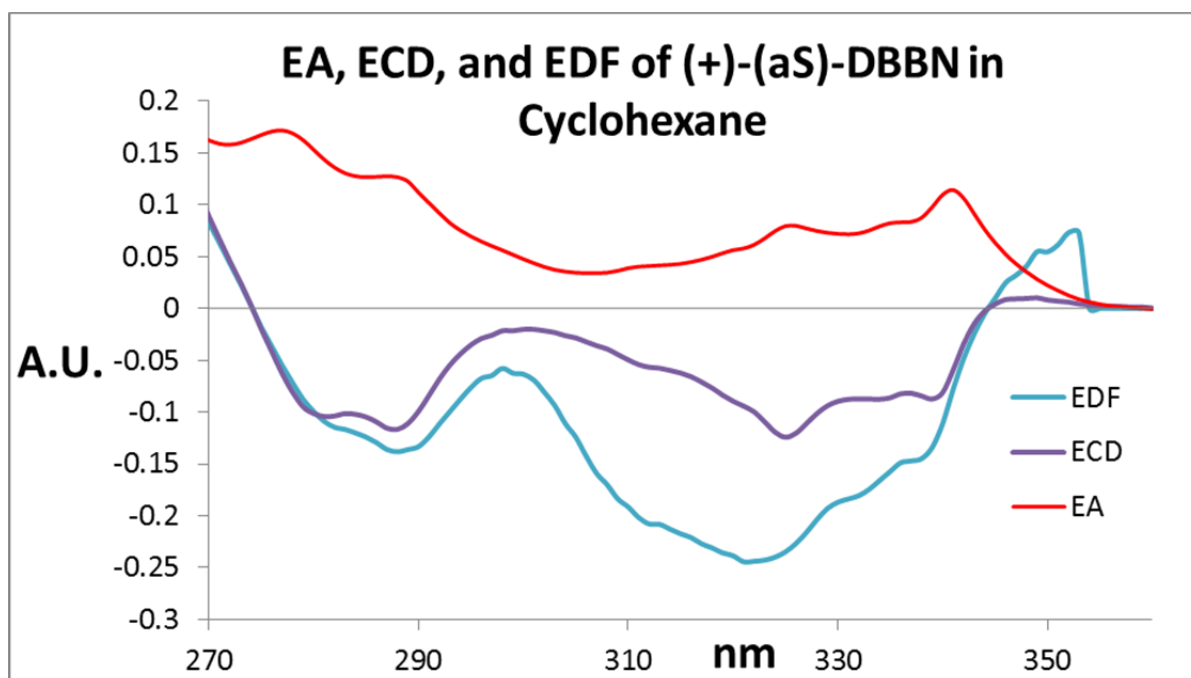
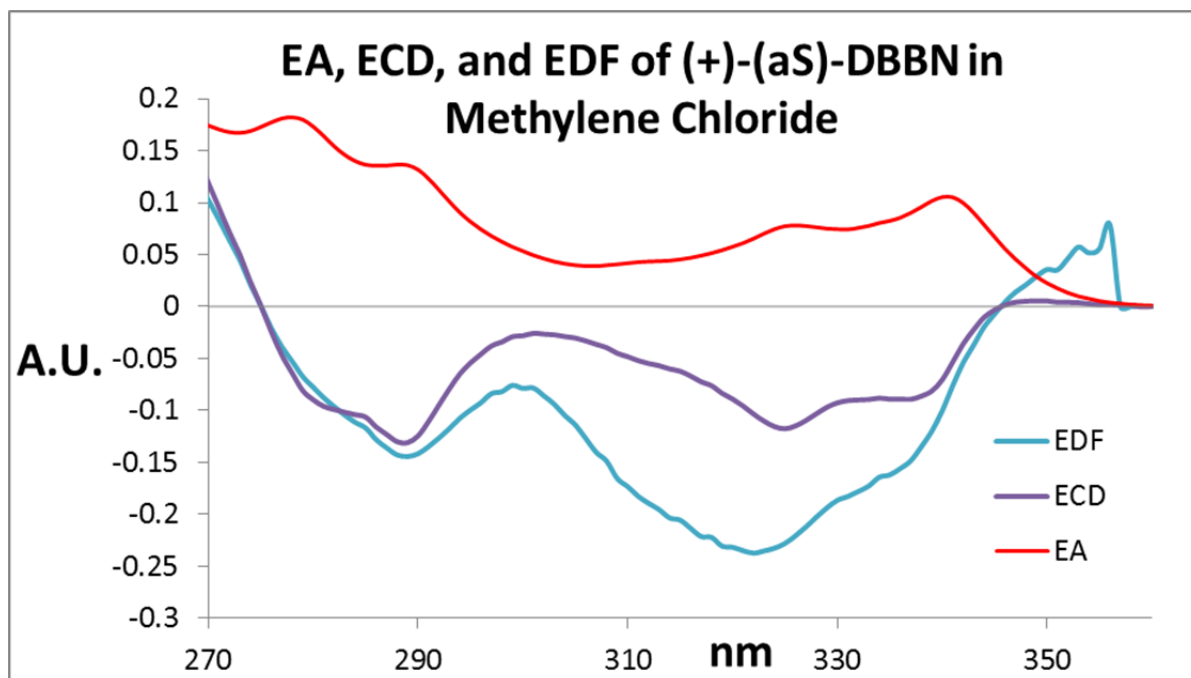


Figure S6: Experimental EDF, ECD, and EA spectra for DBBN in multiple solvents (270 – 360 nm).

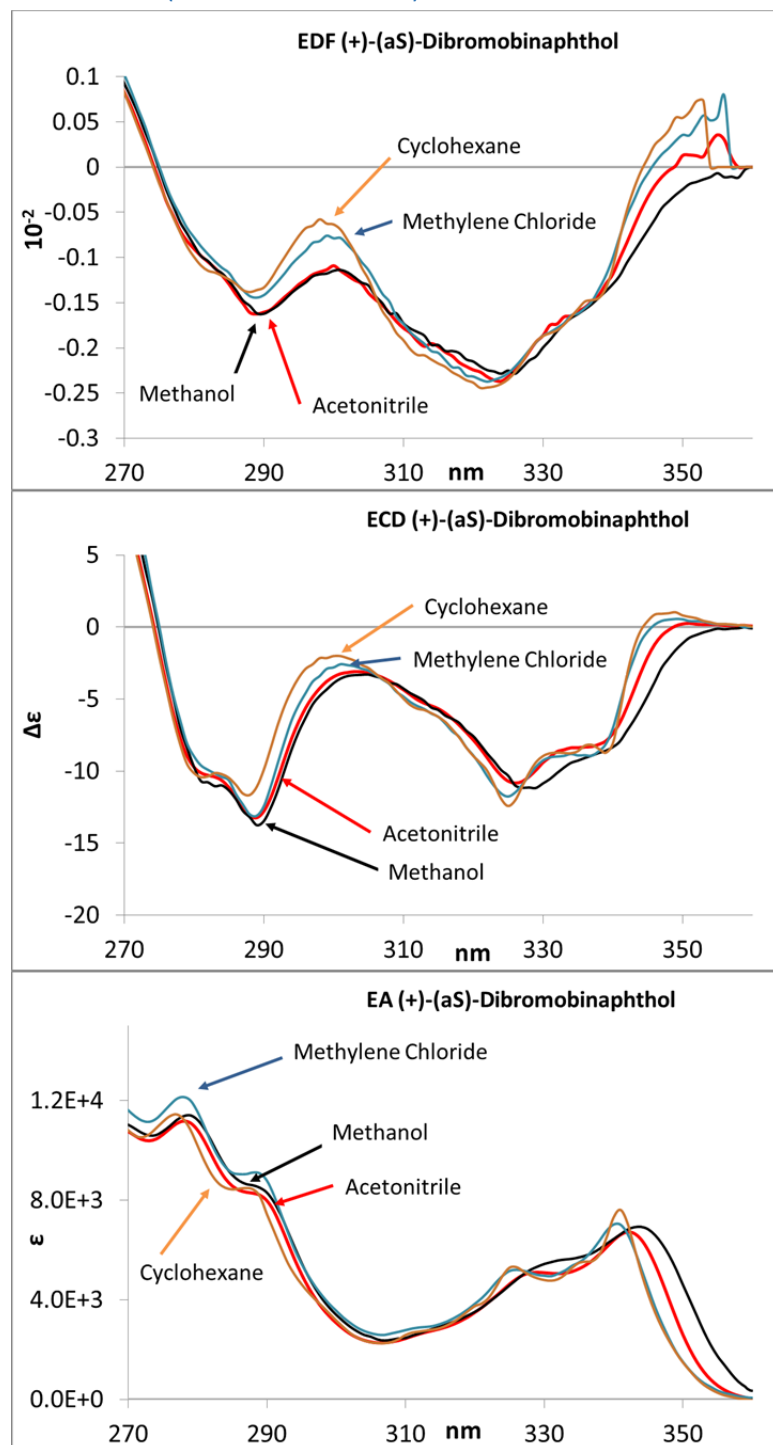
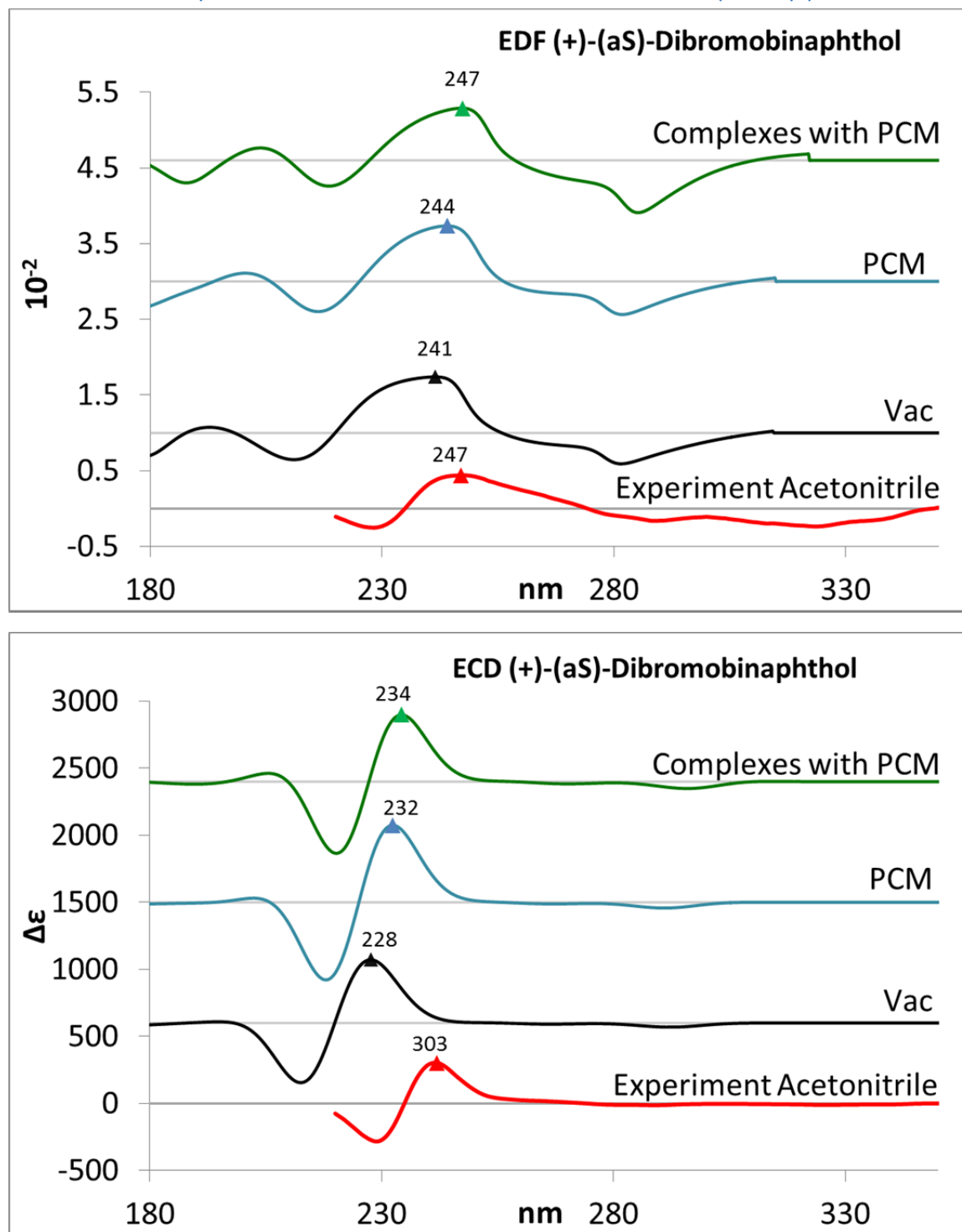


Figure S7: Calculated EDF, ECD, and EA spectra for (+)-(aS)-Dibromobinaphthol at the CAM-B3LYP/6-311++G(2d,2p) level



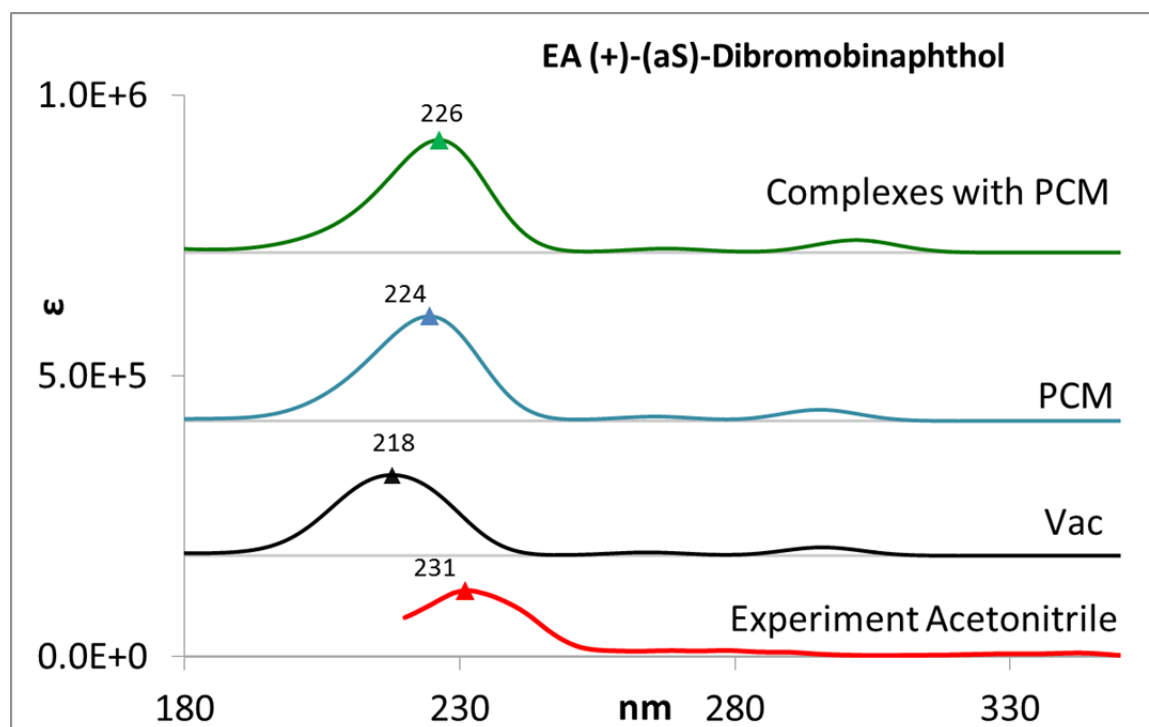
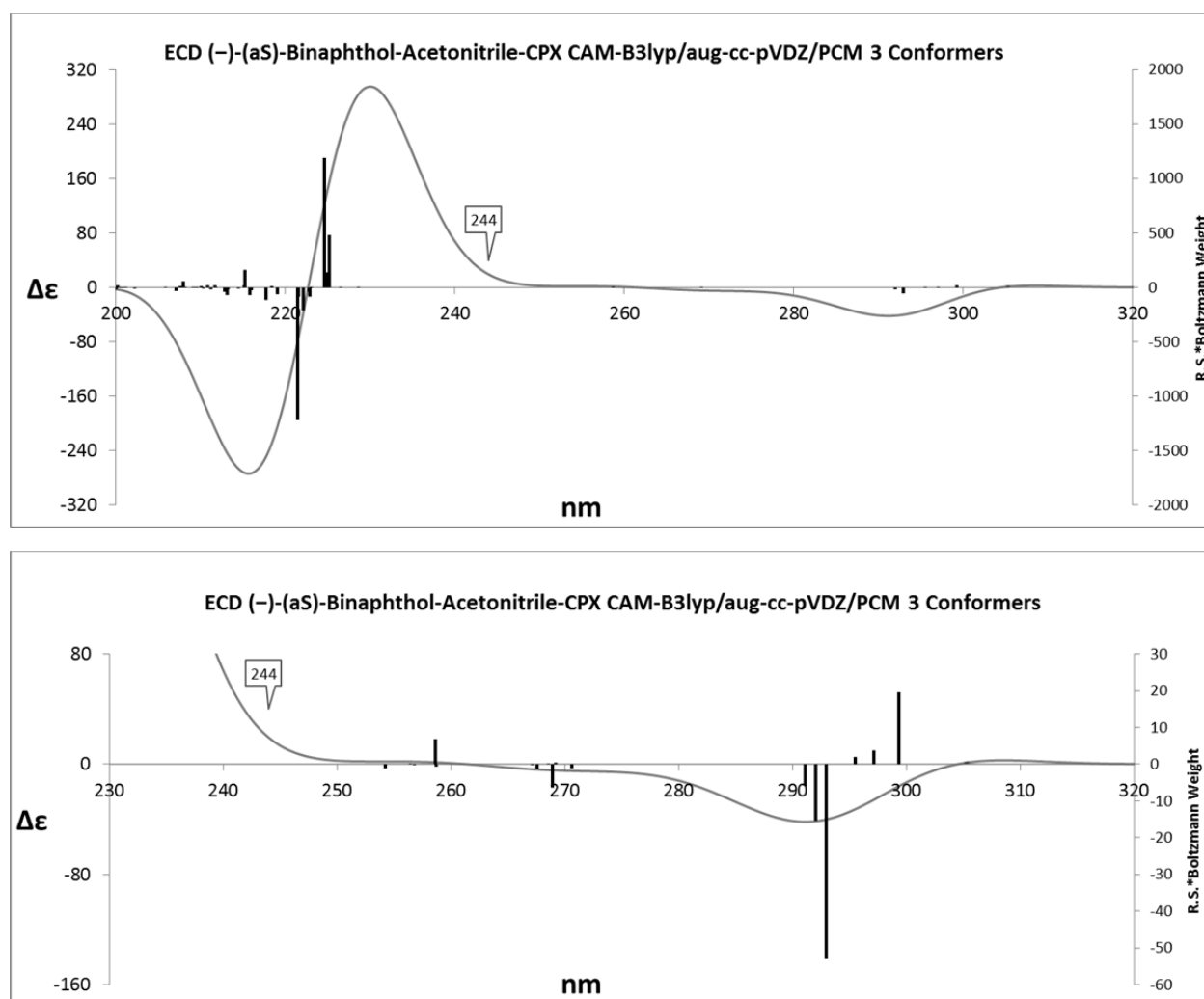


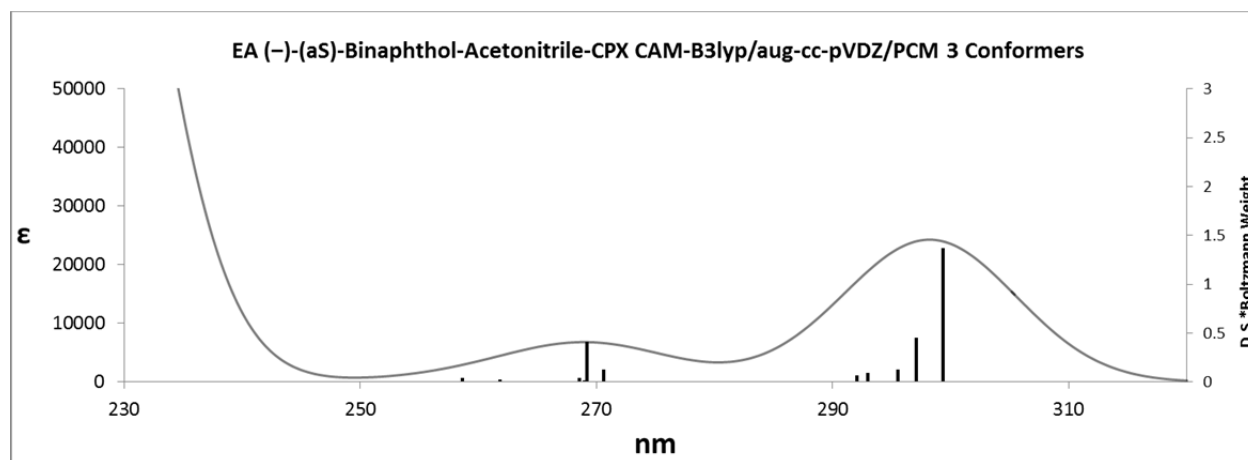
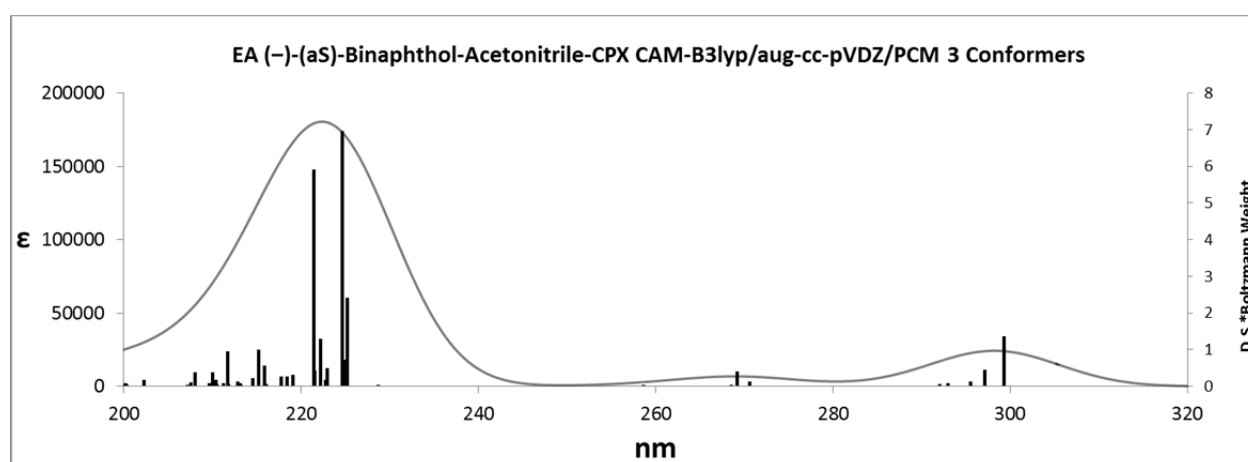
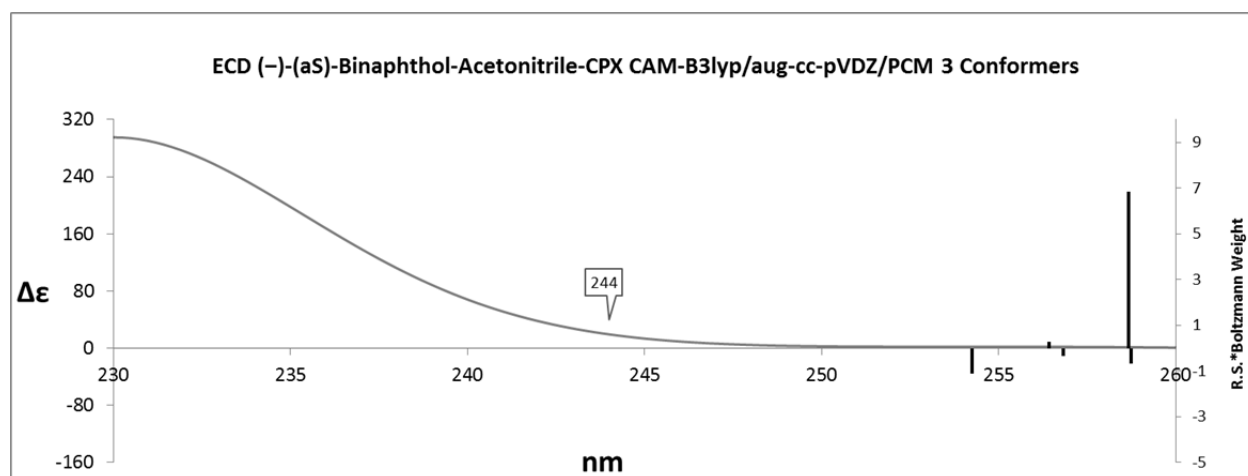
Figure S8: ECD and EA spectra with rotational strengths and dipole strengths of the transitions shown.

3 conformations of the Binaphthol-Acetonitrile complex Boltzmann weighted.

Rotational strengths in 10^{-40} erg-esu-cm/Gauss

Dipole strengths in Au





Showing dominant conformer

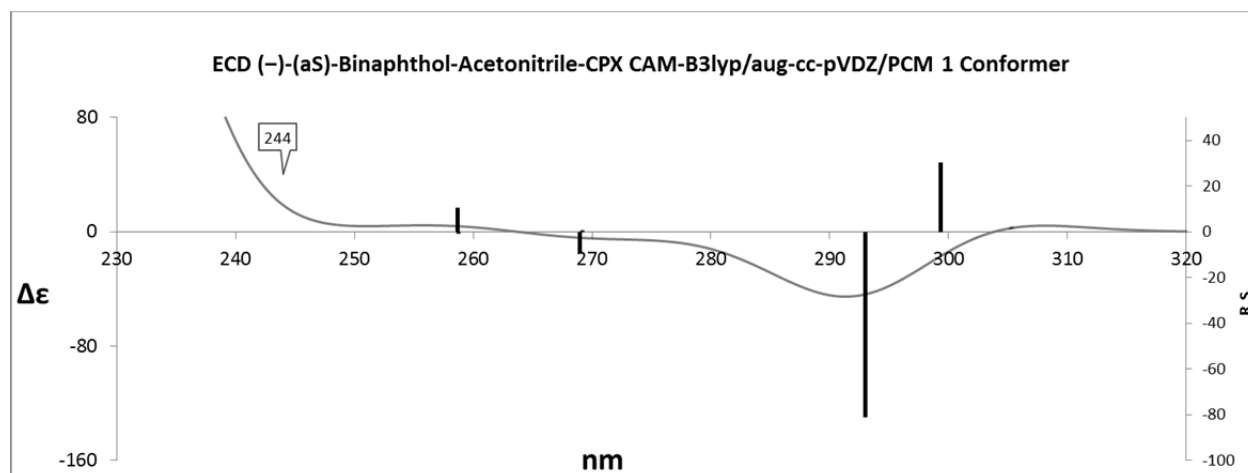
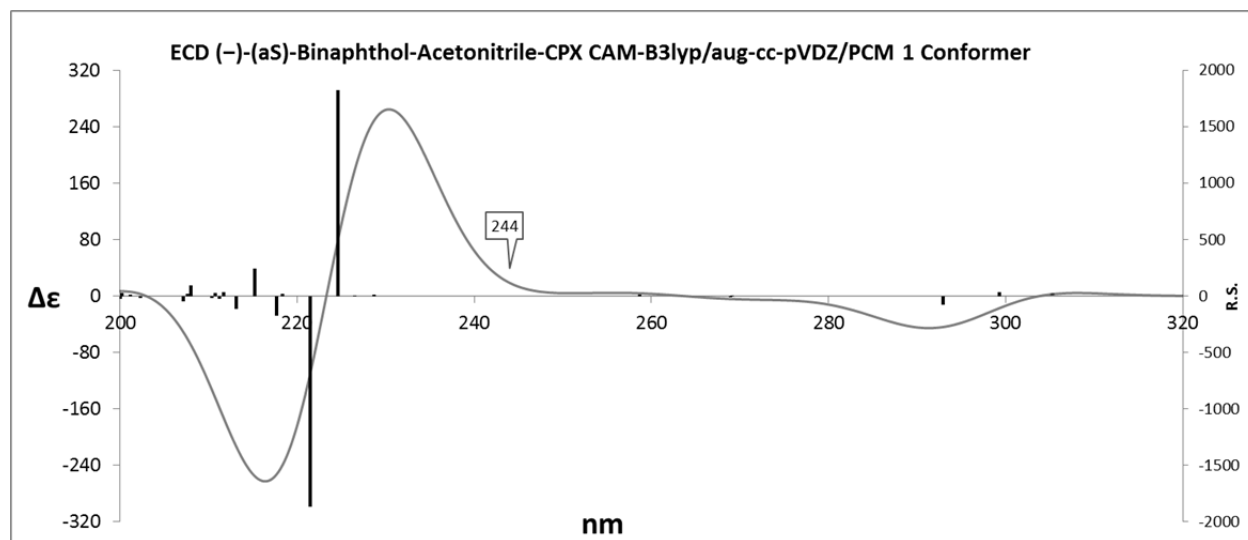


Figure S9: Experimental EA, ECD, and EDF spectra all shown together (arbitrary y-axis scaling) for BN 230-270 nm.

