SUPPORTING INFORMATION

Experimental Details

Materials and Methods

All reagents were purchased from commercial sources and used as received with the exception of aldehyde **1**, which was purified by sublimation under high vacuum with mild heat (60-70^{o}C) using a cold finger apparatus before use in the assay.

The four photoelastic modulator polarimeter was previously described.[58,59] In brief, light was incident on the sample at normal incidence. The transmitted light was detected with a photomultiplier. This instruments measures the 16 parameters of a normalized Mueller matrix at each wavelength. Briefly, the polarization state generator (PSG) and the polarizer state analyzer (PSA) are composed of two photoelastic modulators (PEMs) (Hinds Instruments) each operating at a different frequency, and a polarizer. The PEMs were set at relative orientations of ±45°. A Xe arc lamp coupled to a monochromator allows spectroscopic measurements in a range from 290 nm to 850 nm. The advantage of this setup over other Mueller matrix polarimeters is that measurements are obtained without any moving parts. The 96-well glass bottom plate (In Vitro Scientific, P96-1.5H-N, with a MatTek Corporation top coverglass, PCS10872-1.0)) was mounted on two linear actuators (Newport) with a range of only three wells, thus only a 3x3 block of wells could be measured without repositioning the well plate. Ideally, a high-speed microscope stage outfitted for well plates should be used to capture the whole plate without the need for repositioning.

CD Calibration Curves and Test Sample Experimental

Solutions were prepared as follows: 100 μL of the appropriate amine combination (obtained by mixing 3 mM HPLC grade acetonitrile solutions of the two enantiomers of each analyte in prescribed ratios) were mixed with 100 μL of a 3 mM solution of aldehyde 1 for 10 minutes. Then 100 μL of a 1 mM solution of $Fe(OTf)_2$ was added to the mixture and the system was allowed to equilibrate for 2 hours, effectively making the concentration of host-guest complex 0.33 mM. Upon completion of the reaction, 30 μL of each solution was place in each well of the 96 well plate. Each well was filled fully with an addition 270 μL of HPLC grade acetonitrile, leaving the final concentration of the active complex at 0.033 mM. Comparatively dilute samples were used to account for the increased optical path (12 mm) as compared with 10 mm cuvettes.

Plots in main text were prepared with OriginLab and linear fits were computed using the least squares method. Supporting figure plots were prepared with Microsoft® Excel® and the physically relevant roots of the corresponding third-degree polynomial equations calculated *via* Wolfram Mathematica software.

Additional Figures

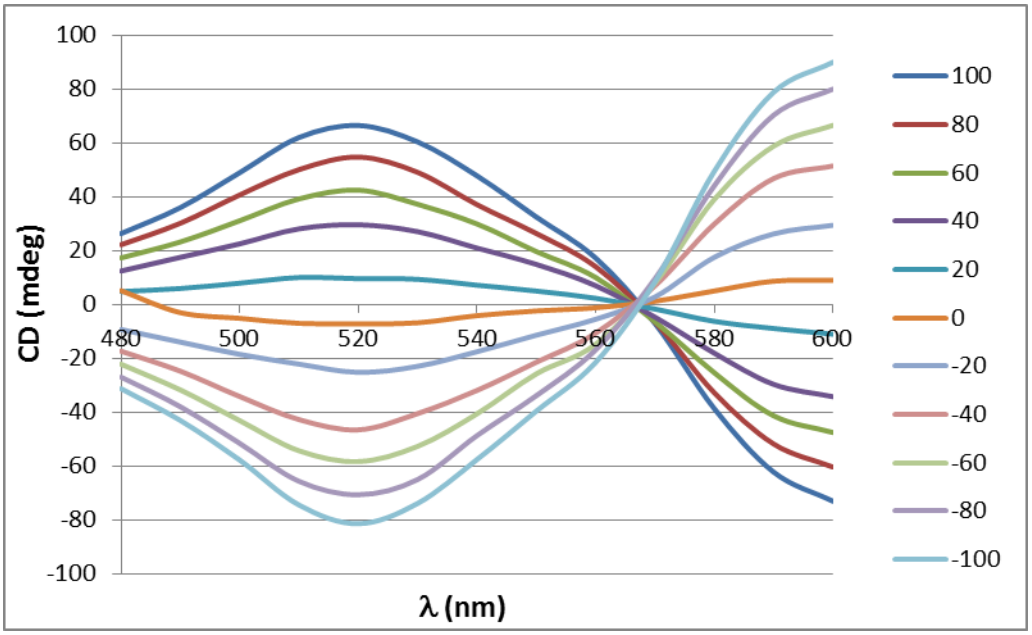

Figure S1. CD spectra for the assembly with **5**.

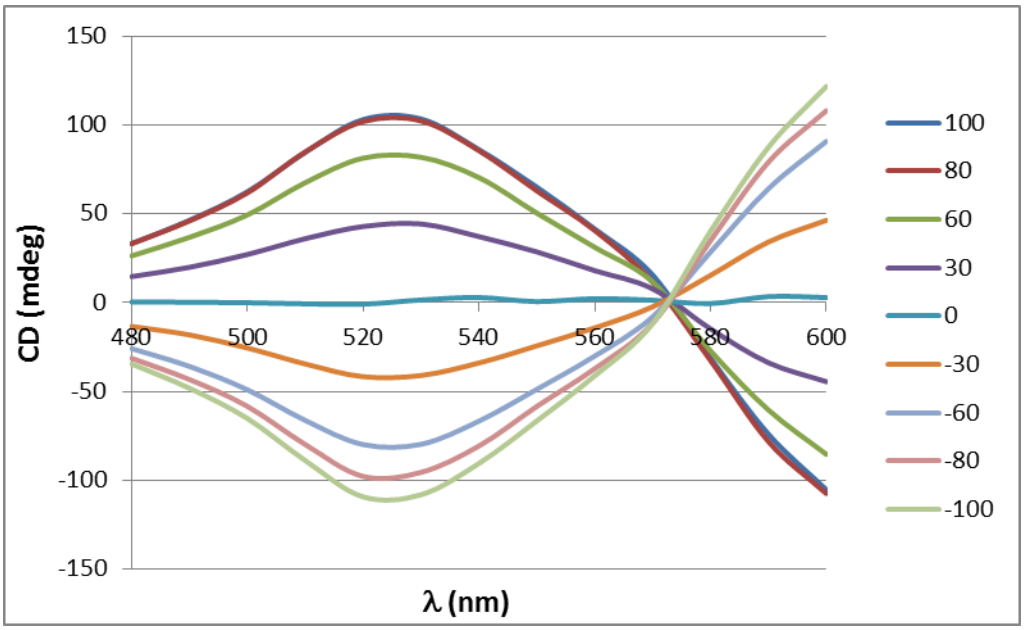

Figure S2. CD spectra for the assembly with **6**.

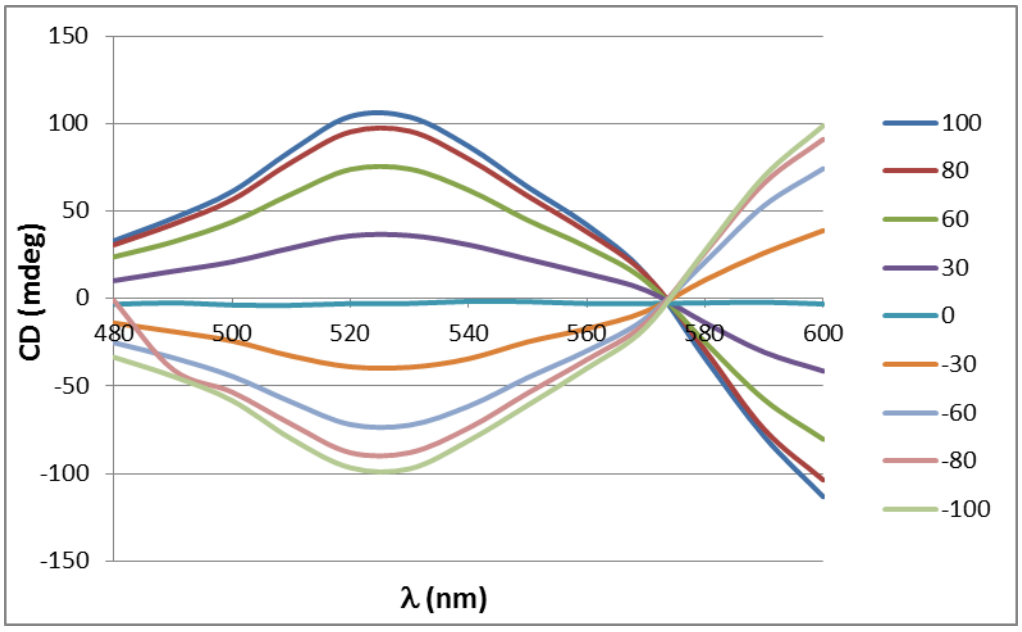

Figure S3. CD spectra for the assembly with **7**.

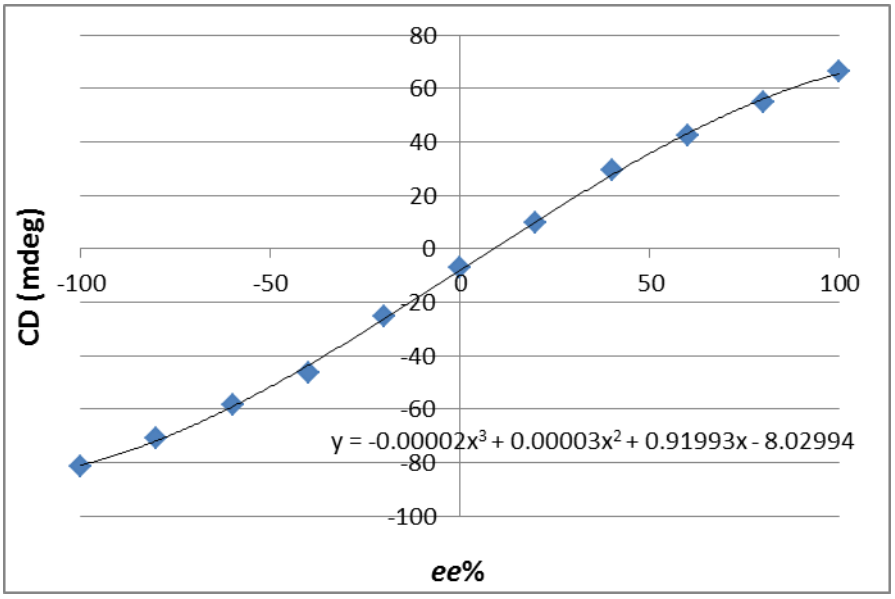

Figure S4. Calibration curve for the assembly with **5** at 520 nm.

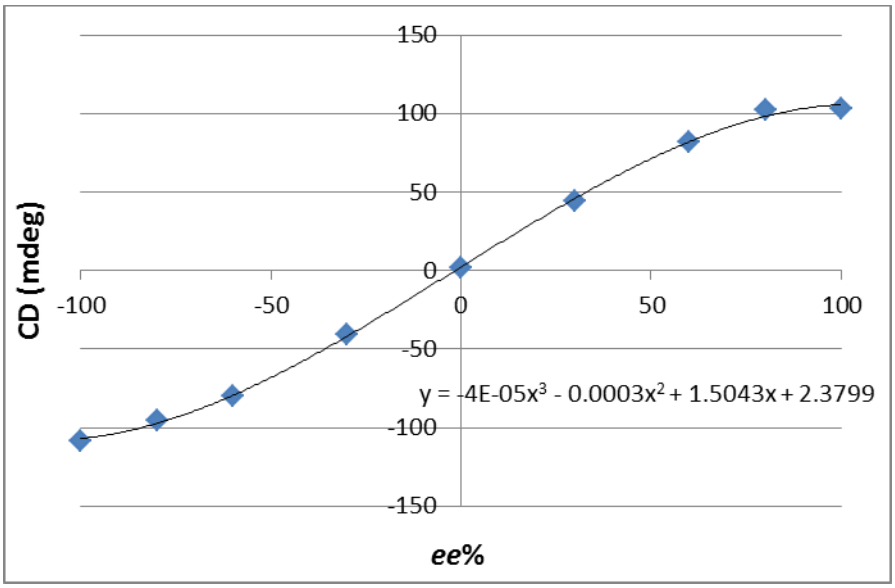

Figure S5. Calibration curve for the assembly with **6** at 530 nm.

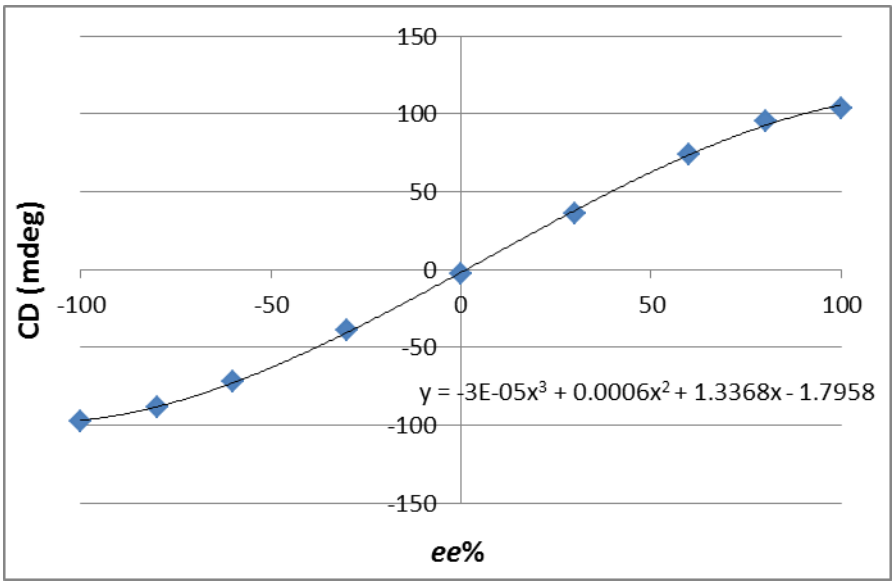

Figure S6. Calibration curve for the assembly with **7** at 530 nm.