

*Supplementary Information for*

**Abnormal Sergeants-and-Soldiers Effect of  
Poly(quinoxaline-2,3-diyl)s Enabling Discrimination of  
One-Carbon Homologous *n*-Alkanes  
through a Highly Sensitive Solvent-dependent Helix Inversion**

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## 1 General

All reactions were carried out under an atmosphere of nitrogen with magnetic stirring.  $^1\text{H}$  NMR spectra were recorded on a Varian 400-MR spectrometer at ambient temperature.  $^1\text{H}$  NMR data are reported as follows: chemical shift in ppm downfield from tetramethylsilane ( $\delta$  scale), multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, quint = quintet, sex = sextet, m = multiplet and br = broad), coupling constant (Hz), and integration. The GPC analysis was carried out with TSKgel GMH<sub>XL</sub> ( $\text{CHCl}_3$ , polystyrene standards). Preparative GPC was performed on JAI LC-908 equipped with JAIGEL-1H and -2H columns in a series ( $\text{CHCl}_3$ ). UV-vis absorption spectra were recorded on a JASCO V-770 spectrometer equipped with a JASCO ETC-505T temperature/stirring controller at 20 °C. Circular dichroism (CD) spectra were recorded on a JASCO J-1500 spectrometer equipped with a JASCO PTC-510 temperature/stirring controller at 20 °C. Fluorescence spectra were recorded on a JASCO FP-6300 spectrofluorometer. Absolute quantum yields were measured by a Hamamatsu absolute PL quantum yield spectrometer C11347. Circularly polarized luminescence (CPL) spectra were recorded on a JASCO CPL-200S at room temperature. Tetrahydrofuran (THF) was dried and deoxygenized using an alumina/catalyst column system (Glass Contour Co.). *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub>,<sup>1</sup> 1,2-dibutoxy-4,5-diisocyano-3,6-dimethylbenzene (**Q1**),<sup>2</sup> 1,2-diisocyano-3,6-dimethyl-4,5-bis(propoxymethyl)benzene (**Q2**),<sup>3</sup> 1,2-diisocyano-3,6-dimethyl-4,5-bis((((S)-octan-2-yl)oxy)methyl)benzene (**Qa**),<sup>4</sup> 1,2-diisocyano-3,6-dimethyl-4,5-bis((((S)-octan-3-yl)oxy)methyl)benzene (**Qb**),<sup>4</sup> **1a(100)**,<sup>5</sup> **1b(100)**,<sup>5</sup> **2b(40/60)**,<sup>6</sup> **3b(40/60)**,<sup>6</sup> **3b(2.5/97.5)**,<sup>6</sup> **3b(5/95)**,<sup>6</sup> **3b(7.5/92.5)**,<sup>6</sup> **3b(10/90)**,<sup>6</sup> **3b(15/85)**,<sup>6</sup> **3b(20/80)**,<sup>6</sup> **3b(30/70)**,<sup>6</sup> **3b(40/60)**,<sup>6</sup> **3b(60/40)**,<sup>6</sup> **3b(80/20)**,<sup>6</sup> 2',3'-diisocyano-4,4''-dimethoxy-1,1':4',1''-terphenyl (**Qlum**),<sup>7,8,9</sup> were prepared according to the reported procedures. Other chemical reagents were purchased from the commercial sources and were used without further purification.

## 2 Experimental Procedures and Spectral Data for New Compounds

**Synthesis of 2a(40/60):** **Qa** (10.6 mg, 24.0  $\mu\text{mol}$ ) and **Q1** (10.8 mg, 36.0  $\mu\text{mol}$ ) were dissolved in THF (3 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 42.1  $\mu\text{L}$ , 0.600  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 14 h, NaBH<sub>4</sub> (4.77 mg, 126  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 1 h. Water (20 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (20 mL). The organic extract was washed with brine (20 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and the solvent was evaporated. The residue was subjected to preparative GPC to give **2a(40/60)** as a beige solid (16.5 mg, 77%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  4.59 (H<sub>a-B</sub>, 40 $\times$ 4H, br s), 3.95 (H<sub>2-B</sub>, 60 $\times$ 2H, br s), 3.84 (H<sub>2-B</sub>, 60 $\times$ 2H, br s), 3.48 (H<sub>a-C</sub>, 40 $\times$ 2H, br s), 2.17 (H<sub>a-A</sub>, H<sub>2-A</sub> and H<sub>t-B</sub>, (40 $\times$ 6+60 $\times$ 6+3)H, br s), 1.72 (H<sub>a-D</sub> and H<sub>2-C</sub> (40 $\times$ 2+60 $\times$ 4)H, br s), 1.47 (H<sub>a-E</sub>, H<sub>a-F</sub>, and H<sub>a-G</sub>, 40 $\times$ 16H, br s), 1.26 (H<sub>a-J</sub> and H<sub>2-D</sub> (40 $\times$ 6+60 $\times$ 4)H), 0.95 (H<sub>2-E</sub>, 60 $\times$ 6H, br s), 0.84 (H<sub>a-I</sub>, 40 $\times$ 6H, br s), small peaks originated from end-group were observed in 10.04 (H<sub>t-A</sub>, 1H, s) and 7.09 ppm (H<sub>t-C</sub>, 4H, br s); GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 2.69 \times 10^4$ ,  $M_w/M_n = 1.11$ .

Scheme S1. Synthesis of **2a(40/60)**.

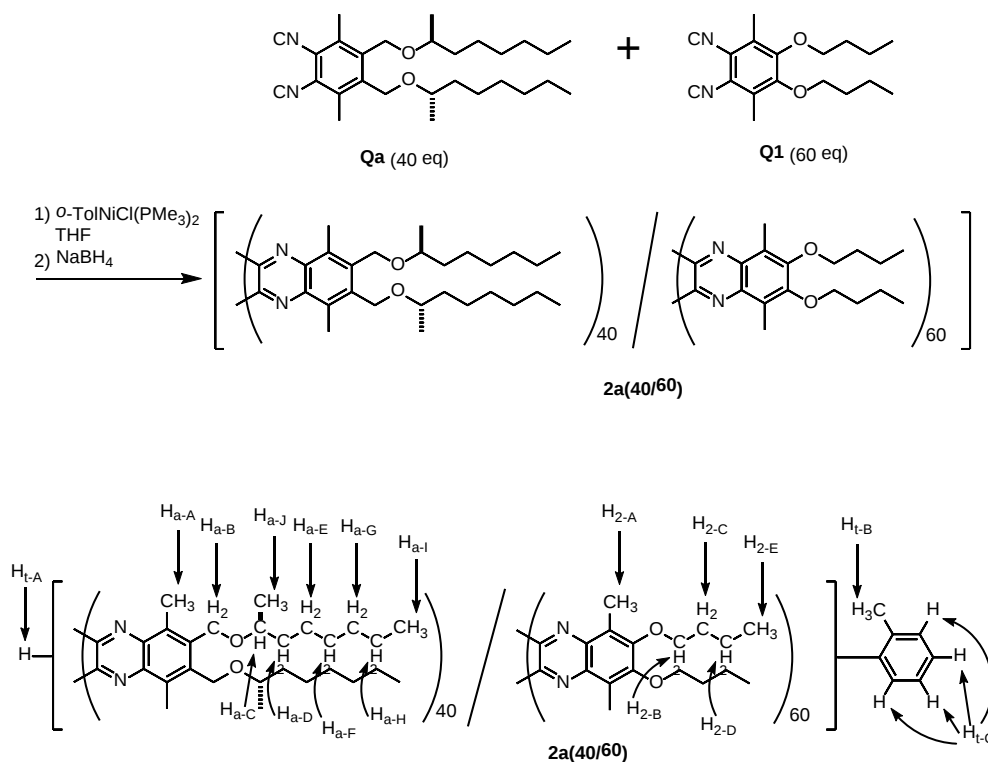


Figure S1. Structure of **2a(40/60)** with <sup>1</sup>H NMR assignment.

**Synthesis of 3a(40/60):** **Qa** (10.6 mg, 24.0  $\mu\text{mol}$ ) and **Q2** (10.8 mg, 36.0  $\mu\text{mol}$ ) were dissolved in THF (3 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 42.1  $\mu\text{L}$ , 0.600  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 11 h, NaBH<sub>4</sub> (4.77 mg, 126  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 1 h. Water (20 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (20 mL). The organic extract was washed with brine (20 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and the solvent was evaporated. The residue was subjected to preparative GPC to give **3a(40/60)** as a beige solid (19.4 mg, 91%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  4.64 (H<sub>a-B</sub> and H<sub>3-B</sub>, (40 $\times$ 4+60 $\times$ 4)H, br s), 3.46 (H<sub>l-C</sub> and H<sub>3-C</sub>, (40 $\times$ 2+60 $\times$ 4)H, br s), 2.33 (H<sub>l-A</sub>, H<sub>3-A</sub> and H<sub>t-B</sub>, (40 $\times$ 6+60 $\times$ 6+3)H, br s), 1.59 (H<sub>a-D</sub>, and H<sub>3-D</sub>, (40 $\times$ 4+60 $\times$ 4)H, br s), 1.41 (H<sub>a-E</sub>, 40 $\times$ 4H, br s), 1.26 (H<sub>a-F</sub>, H<sub>a-G</sub> and H<sub>a-H</sub>, 40 $\times$ 12H, br s), 1.07–0.66 (H<sub>l-J</sub>, H<sub>l-I</sub> and H<sub>3-E</sub>, (40 $\times$ 12+60 $\times$ 6)H, br s), small peaks originated from end-group were observed in 10.04 (H<sub>t-A</sub>, 1H, s) and 7.09 ppm (H<sub>t-C</sub>, 4H, br s); GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 3.60 \times 10^4$ ,  $M_w/M_n = 1.10$ .

Scheme S2. Synthesis of **3a(40/60)**.

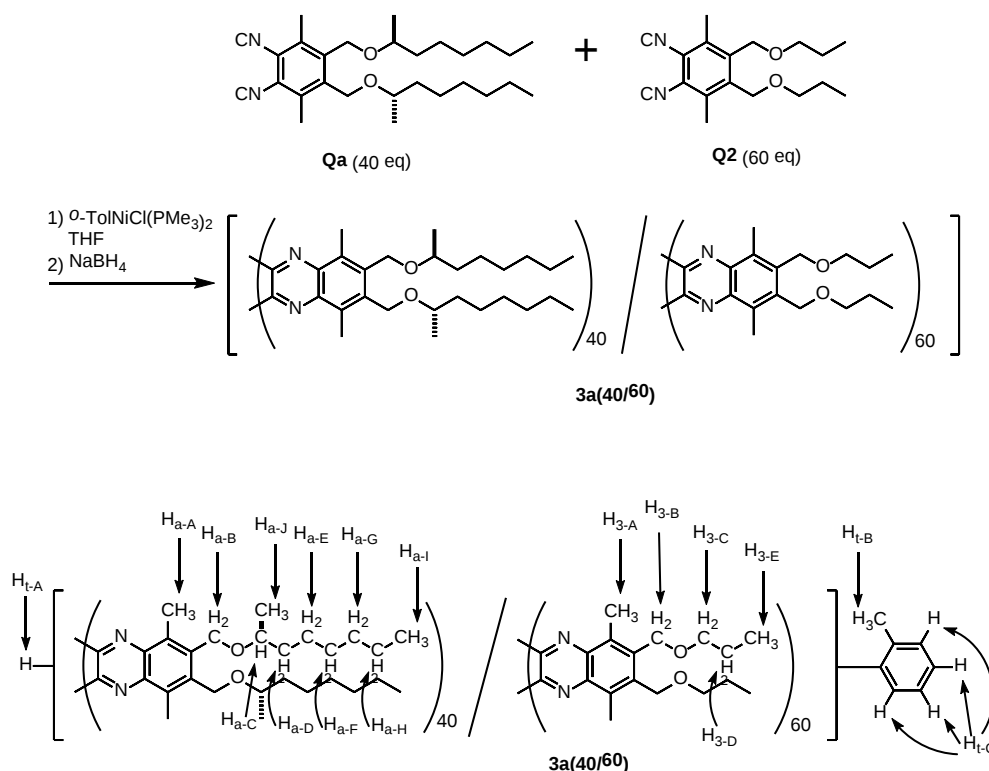


Figure S2. Structure of **3a(40/60)** with <sup>1</sup>H NMR assignment.

**Synthesis of 3b(350/650):** **Qb** (20.1 mg, 45.5  $\mu\text{mol}$ ) and **Q2** (25.4 mg, 84.5  $\mu\text{mol}$ ) were dissolved in THF (7 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 9.13  $\mu\text{L}$ , 0.130  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 84 h, NaBH<sub>4</sub> (1.03 mg, 27.3  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 2 h. Water (40 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (40 mL). The organic extract was washed with brine (40 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and concentrated under vacuum. The residue was purified by reprecipitation using methanol to give **3b(350/650)** as a beige solid (29.8 mg, 66%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  4.77 (H<sub>b-B</sub> and H<sub>3-B</sub>, (350 $\times$ 4+650 $\times$ 4)H, br s), 3.45 (H<sub>3-C</sub>, 650 $\times$ 4H, br s), 3.32 (H<sub>b-C</sub>, 350 $\times$ 2H, br s), 2.34 (H<sub>b-A</sub>, H<sub>3-A</sub> and H<sub>t-B</sub>, (350 $\times$ 6+650 $\times$ 6+3)H, br s), 1.75–1.12 (H<sub>b-D</sub>, H<sub>b-E</sub>, H<sub>b-F</sub>, H<sub>b-G</sub>, H<sub>b-I</sub> and H<sub>3-D</sub>, (350 $\times$ 6+650 $\times$ 6+3)H, br s), 0.86 (H<sub>b-H</sub>, H<sub>b-J</sub> and H<sub>3-E</sub>, (350 $\times$ 12+650 $\times$ 6)H, br s), the peaks originated from end-group were not observed because of high polymerization degree; GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 5.13 \times 10^5$ ,  $M_w/M_n = 1.69$ .

Scheme S3. Synthesis of **3b(350/650)**.

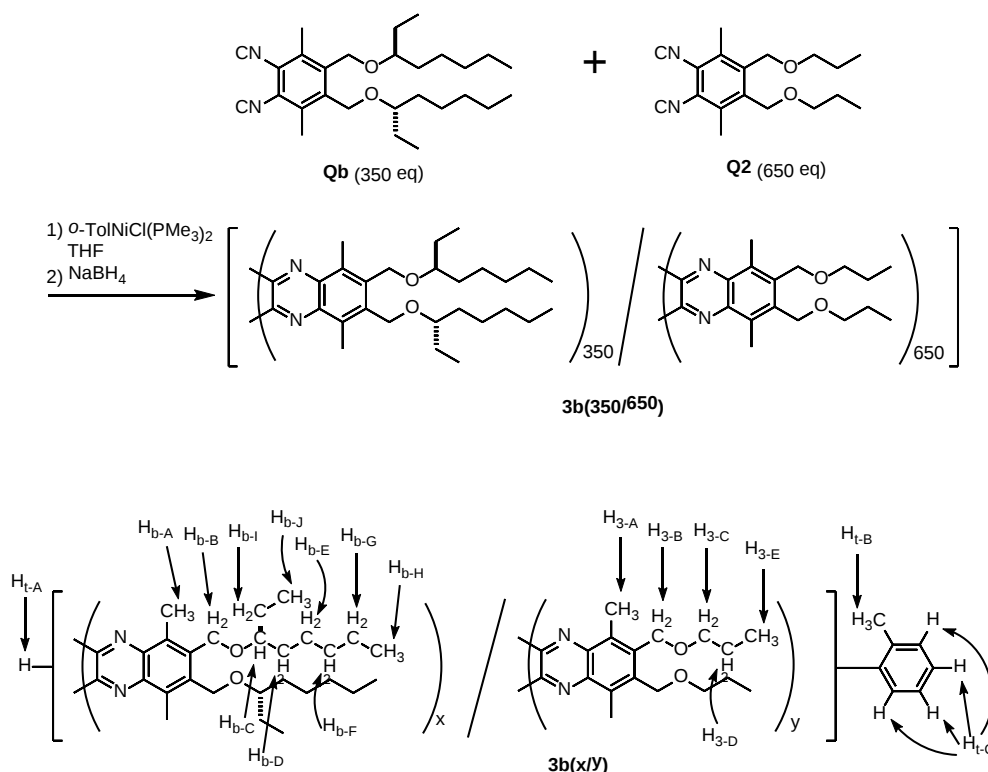
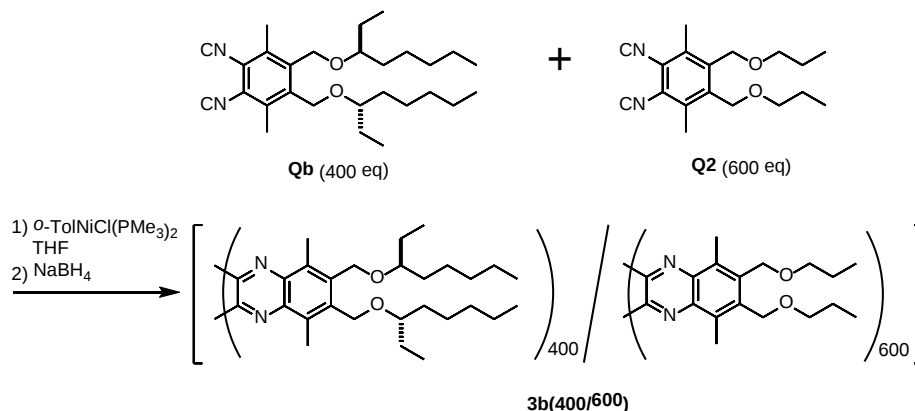


Figure S3. Structure of **3b(x/y)** with <sup>1</sup>H NMR assignment.

**Synthesis of 3b(400/600):** **Qb** (24.7 mg, 56.0  $\mu\text{mol}$ ) and **Q2** (25.2 mg, 84.0  $\mu\text{mol}$ ) were dissolved in THF (7 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 9.83  $\mu\text{L}$ , 0.140  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 23 h, NaBH<sub>4</sub> (1.11 mg, 29.4  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 2 h. Water (40 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (40 mL). The organic extract was washed with brine (40 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and concentrated under vacuum. The residue was purified by reprecipitation using methanol to give **3b(400/600)** as a beige solid (44.9 mg, 90%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  4.57 (H<sub>b-B</sub> and H<sub>3-B</sub>, (400 $\times$ 4+600 $\times$ 4)H, br s), 3.45 (H<sub>3-C</sub>, 600 $\times$ 4H, br s), 3.32 (H<sub>b-C</sub>, 400 $\times$ 2H, br s), 2.33 (H<sub>b-A</sub>, H<sub>3-A</sub> and H<sub>t-B</sub>, (400 $\times$ 6+600 $\times$ 6+3)H, br s), 1.69–1.16 (H<sub>b-D</sub>, H<sub>b-E</sub>, H<sub>b-F</sub>, H<sub>b-G</sub>, H<sub>b-I</sub> and H<sub>3-D</sub>, (400 $\times$ 20+600 $\times$ 4)H, br s), 0.88 (H<sub>b-H</sub>, H<sub>b-J</sub> and H<sub>3-E</sub>, (400 $\times$ 12+600 $\times$ 6)H, br s), the peaks originated from end-group were not observed because of high polymerization degree; GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 5.18 \times 10^5$ ,  $M_w/M_n = 1.59$ .

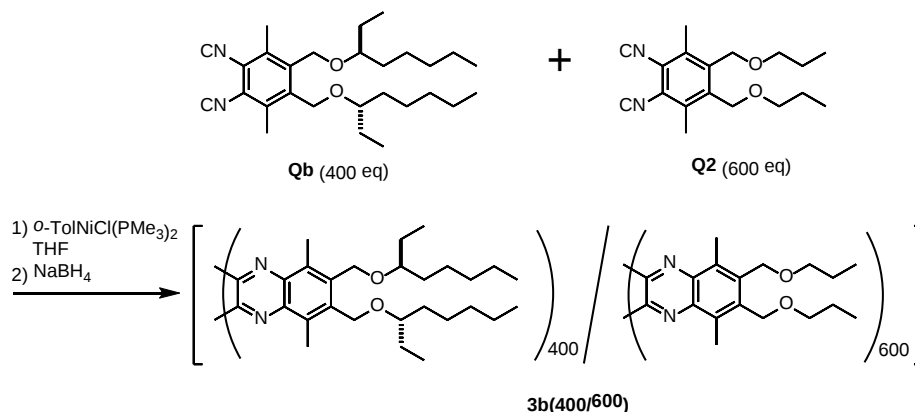
Scheme S4. Synthesis of **3b(400/600)**.



**Synthesis of 3b(500/500):** **Qb** (30.8 mg, 70.0  $\mu\text{mol}$ ) and **Q2** (21.0 mg, 70.0  $\mu\text{mol}$ ) were dissolved in THF (7 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 9.83  $\mu\text{L}$ , 0.140  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 23 h, NaBH<sub>4</sub> (1.11 mg, 29.4  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 2 h. Water (40 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (40 mL). The organic extract was washed with brine (40 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and concentrated under vacuum. The residue was purified by reprecipitation using methanol to give **3b(500/500)** as a beige solid (42.4 mg, 82%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  4.57 (H<sub>b-B</sub> and H<sub>3-B</sub>, (500 $\times$ 4+500 $\times$ 4)H, br s), 3.44 (H<sub>3-C</sub>, 500 $\times$ 4H, br s), 3.32 (H<sub>b-C</sub>, 500 $\times$ 2H, br s), 2.34 (H<sub>b-A</sub>, H<sub>3-A</sub> and H<sub>t-B</sub>,

(500×6+500×6+3)H, br s), 1.75–1.12 (H<sub>b-D</sub>, H<sub>b-E</sub>, H<sub>b-F</sub>, H<sub>b-G</sub>, H<sub>b-I</sub> and H<sub>3-D</sub>, (500×20+500×4)H, br s), 0.87 (H<sub>b-H</sub>, H<sub>b-J</sub> and H<sub>3-E</sub>, (500×12+500×6)H, br s), the peaks originated from end-group were not observed because of high polymerization degree; GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 5.08 \times 10^5$ ,  $M_w/M_n = 1.59$ .

Scheme S5. Synthesis of **3b(500/500)**.



**Synthesis of 3b(400/600/2):** **Qb** (24.7 mg, 56.0  $\mu\text{mol}$ ), **Q2** (25.2 mg, 84.0  $\mu\text{mol}$ ), and **Qlum** (60.11 mM, 4.66  $\mu\text{L}$ , 0.280 mmol) were dissolved in THF (7 mL). A THF solution of *o*-TolNiCl(PMe<sub>3</sub>)<sub>2</sub> (14.24 mM, 9.83  $\mu\text{L}$ , 0.140  $\mu\text{mol}$ ) was added to the monomer solution with vigorous stirring. After 41 h, NaBH<sub>4</sub> (1.11 mg, 29.4  $\mu\text{mol}$ ) was added to the reaction mixture and stirred for 2 h. Water (40 mL) was added to the solution and extracted with CH<sub>2</sub>Cl<sub>2</sub> (40 mL). The organic extract was washed with brine (40 mL), dried over Na<sub>2</sub>SO<sub>4</sub>, and concentrated under vacuum. The residue was purified by reprecipitation using methanol to give **2b(400/600/2)** as a beige solid (46.9 mg, 94%). <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.97–7.02 (H<sub>lum-B</sub>, H<sub>lum-A</sub>, and H<sub>lum-C</sub>, and H<sub>t-C</sub>, (2×10+4)H, br m), 4.59 (H<sub>b-B</sub> and H<sub>3-B</sub>, (400×4+600×4)H, br s), 3.65 (H<sub>3-C</sub>, 600×4H, br s), 3.45 (H<sub>b-C</sub>, and H<sub>lum-D</sub>, (400×2+2×6)H, br s), 2.33 (H<sub>b-A</sub>, H<sub>3-A</sub> and H<sub>t-B</sub>, (400×6+600×6+3)H, br s), 1.79–1.16 (H<sub>b-D</sub>, H<sub>b-E</sub>, H<sub>b-F</sub>, H<sub>b-G</sub>, H<sub>b-I</sub> and H<sub>3-D</sub>, (400×20+600×4)H, br s), 0.88 (H<sub>b-H</sub>, H<sub>b-J</sub> and H<sub>3-E</sub>, (400×12+600×6)H, br s), a peak originated from H<sub>t-A</sub> was not observed because of high polymerization degree; GPC (CHCl<sub>3</sub>, g/mol):  $M_n = 4.15 \times 10^5$ ,  $M_w/M_n = 1.29$ .

Scheme S6. Synthesis of **3b(400/600/2)**.

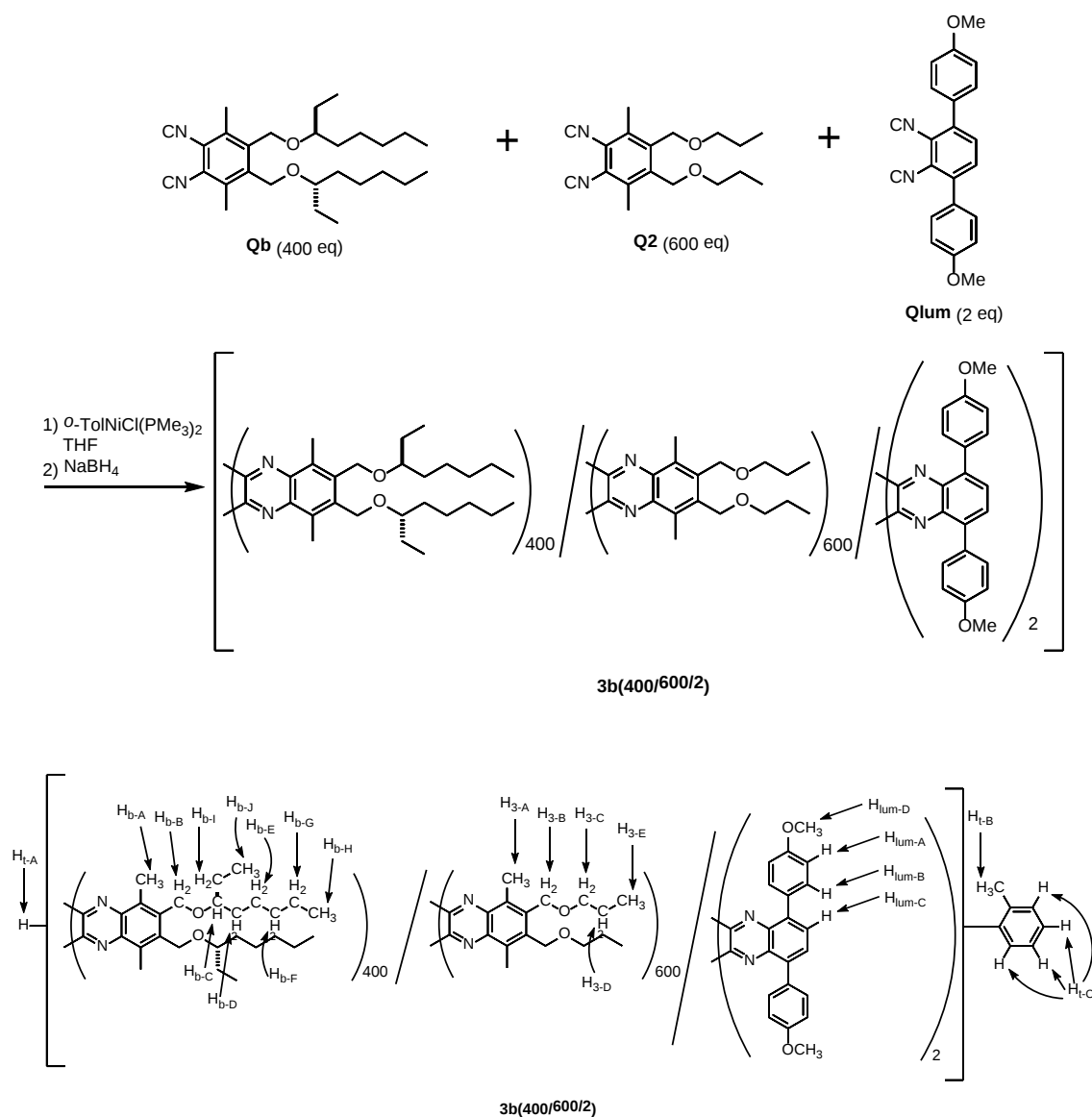


Figure S4. Structure of **3b(400/600/2)** with  $^1H$  NMR assignment.

### 3 Chiroptical Properties of Polymer Solutions

Table S1. Dissymmetry factors  $g_{\text{abs}}$  of polymers for Figure 2.

|                     | $g_{\text{abs}}$ at 366.0 nm /10 <sup>-3</sup> |                  |                   |                  |                  |                  |
|---------------------|------------------------------------------------|------------------|-------------------|------------------|------------------|------------------|
|                     | <i>n</i> -pentane                              | <i>n</i> -hexane | <i>n</i> -heptane | <i>n</i> -octane | <i>n</i> -nonane | <i>n</i> -decane |
| <b>2b(2.5/97.5)</b> | +0.173                                         | +0.138           | +0.103            | +0.126           | +0.061           | —*               |
| <b>2b(5/95)</b>     | +0.226                                         | +0.249           | +0.188            | +0.170           | +0.128           | +0.118           |
| <b>2b(7.5/92.5)</b> | +0.312                                         | +0.398           | +0.262            | +0.275           | +0.159           | +0.102           |
| <b>2b(10/90)</b>    | +0.375                                         | +0.414           | +0.323            | +0.277           | +0.193           | +0.093           |
| <b>2b(15/85)</b>    | +0.489                                         | +0.570           | +0.365            | +0.294           | +0.221           | +0.145           |
| <b>2c(20/80)</b>    | +0.636                                         | +0.629           | +0.400            | +0.311           | +0.139           | +0.017           |
| <b>2a(30/70)</b>    | +0.650                                         | +0.543           | +0.286            | +0.203           | −0.051           | −0.240           |
| <b>2b(40/60)</b>    | +0.564                                         | +0.379           | +0.132            | −0.179           | −0.375           | −0.507           |
| <b>2b(60/40)</b>    | −0.209                                         | −0.537           | −0.973            | −1.212           | −1.553           | −1.730           |
| <b>2b(80/20)</b>    | −1.621                                         | −1.693           | −1.875            | −2.016           | −2.081           | −2.219           |
| <b>1b(100)</b>      | −2.284                                         | −2.280           | −2.238            | −2.313           | −2.335           | −2.406           |

\* A reliable result could not be obtained because of low solubility of the polymer.

## 4 Circularly Polarized Luminescence (CPL) Measurement

The CPL spectra were recorded at room temperature on a JASCO CPL-200 with an SQ-grade quartz cuvette (a path length of 10 mm). A scanning rate of 50 nm/min, an excitation bandwidth of 3000  $\mu\text{m}$ , a monitoring bandwidth of 3000  $\mu\text{m}$ , a response time of 8 seconds, and 5 times accumulation were employed. The CPL dissymmetry factor  $g_{\text{lum}}$  is defined as  $g_{\text{lum}} = 2 \times (I_{\text{L}} - I_{\text{R}})/(I_{\text{L}} + I_{\text{R}})$ , where  $I_{\text{L}}$  and  $I_{\text{R}}$  are the fluorescence intensities of the left- and right-handed circularly polarized light, respectively. The value of  $g_{\text{lum}}$  can be calculated on a JASCO CPL-200 as follows.

$$\begin{aligned} g_{\text{lum}} &= [\text{PL ellipticity (mdeg)}] / [\text{PL intensity (V)}] / (1000 \times 180 / 4\pi) \\ &= [\text{PL ellipticity (mdeg)}] / [\text{PL intensity (V)}] \times (6.98 \times 10^{-5}) \end{aligned}$$

The validity of the coefficient ( $6.98 \times 10^{-5}$ ) was also confirmed by the measurement of previously reported CPL materials<sup>11</sup> (europium(III) ions coordinated by chiral *N,N'*-bis(1-phenylethyl)-2,6-pyridinedicarboxamide in MeCN). For a curve fitting of observed CPL spectra, following equation was adopted on the basis of the supposition that the CPL signals are expressed as a Gaussian distribution functions of the wavenumber,

$$I_{\text{L}} - I_{\text{R}} = a \times \exp( b \times (1/\lambda - c)^2 )$$

where  $\lambda$  is the wavelength (i.e.,  $1/\lambda$  is the wavenumber), and  $a$ ,  $b$ , and  $c$  are variables for the curve fitting. Nonlinear least-squares fitting of  $I_{\text{L}} - I_{\text{R}}$  versus  $\lambda$  was performed by using the Solver Function in Microsoft Office Excel 2013. Sums of the squares of the deviation were minimized by varying 3 parameters ( $a$ ,  $b$ , and  $c$ ).

## 5 CD Measurement with a Solvent-jump Method

In order to reveal the stability the helicity of the polymers in different solvent, a solvent-jump CD measurement was carried out. Firstly, **3b(400/600)** was dissolved in *n*-heptane (0.39 g/L) and was kept to equilibrate for 24 hours at room temperature. 350  $\mu$ L of the solution of **3b(400/600)** in *n*-heptane was transferred to a quartz cell (path length = 10 mm), and the solvent was removed under vacuum in the quartz cell. Finally, 3.5 mL of *n*-octane was added to the quartz cell with **3b(400/600)**, and CD measurement was immediately started to observe the time course of the CD signal.

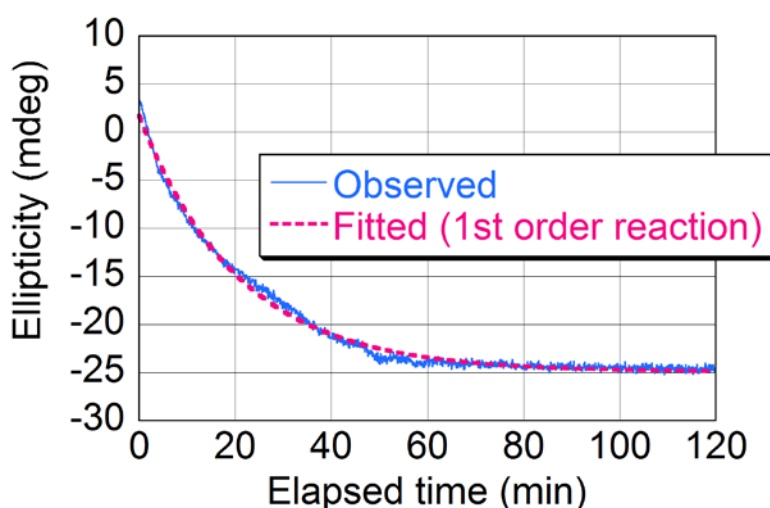


Figure S5. Time-resolved CD intensity change of **3b(400/600)** in *n*-octane. **3b(400/600)** was equilibrated in *n*-heptane and was dried before the measurement.  
( $3.9 \times 10^{-2}$  g/L, 366.0 nm, path length = 10 mm, 393 K)

The *P*-helical structure of **3b(400/600)** induced by *n*-heptane was rapidly inverted to *M*-helical structure in *n*-octane. The half-life of the helix inversion was estimated to 14.4 min at 393 K on the supposition that the helix inversion is a first order reaction.

## 6 Acknowledgements

This work was partly supported by the following grants.

- MEXT KAKENHI, a Grant-in-Aid for Scientific Research on Innovative Areas, “Coordination Asymmetry: Design of Asymmetric Coordination Sphere and Anisotropic Assembly for the Creation of Functional Molecules”, Grant Number 17H05368 (YN)
- MEXT KAKENHI, a Grant-in-Aid for Scientific Research (C), Grant Number 16K05796 (YN)
- CREST, Japan Science and Technology Agency, “Establishment of Molecular Technology towards the Creation of New Function” Area, Grant Number JPMJCR14L1 (MS)

## 7 References

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## 8 NMR Spectra of New Compounds

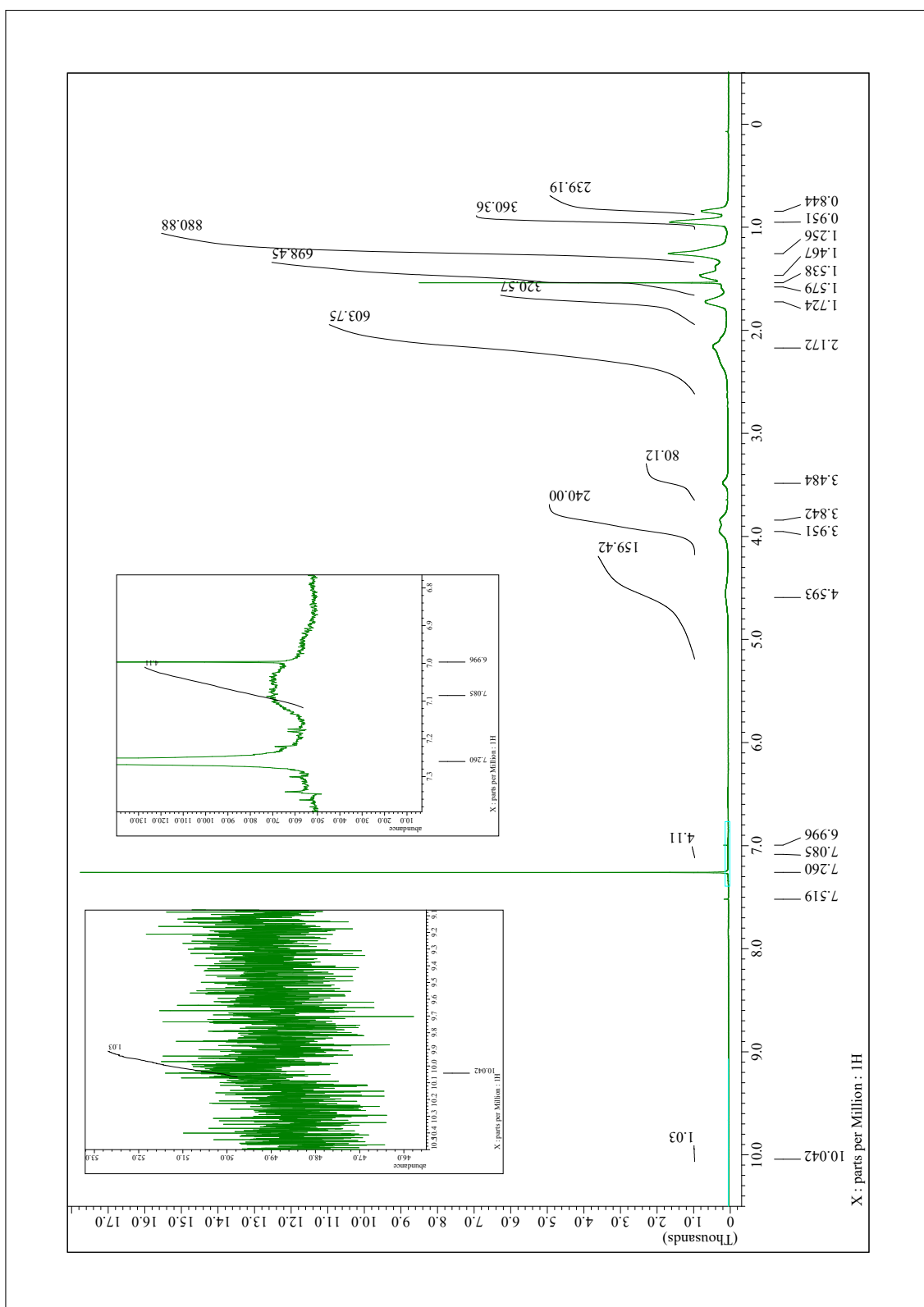


Figure S6.  $^1\text{H}$  NMR spectrum of **2a(40/60)** in  $\text{CDCl}_3$ .

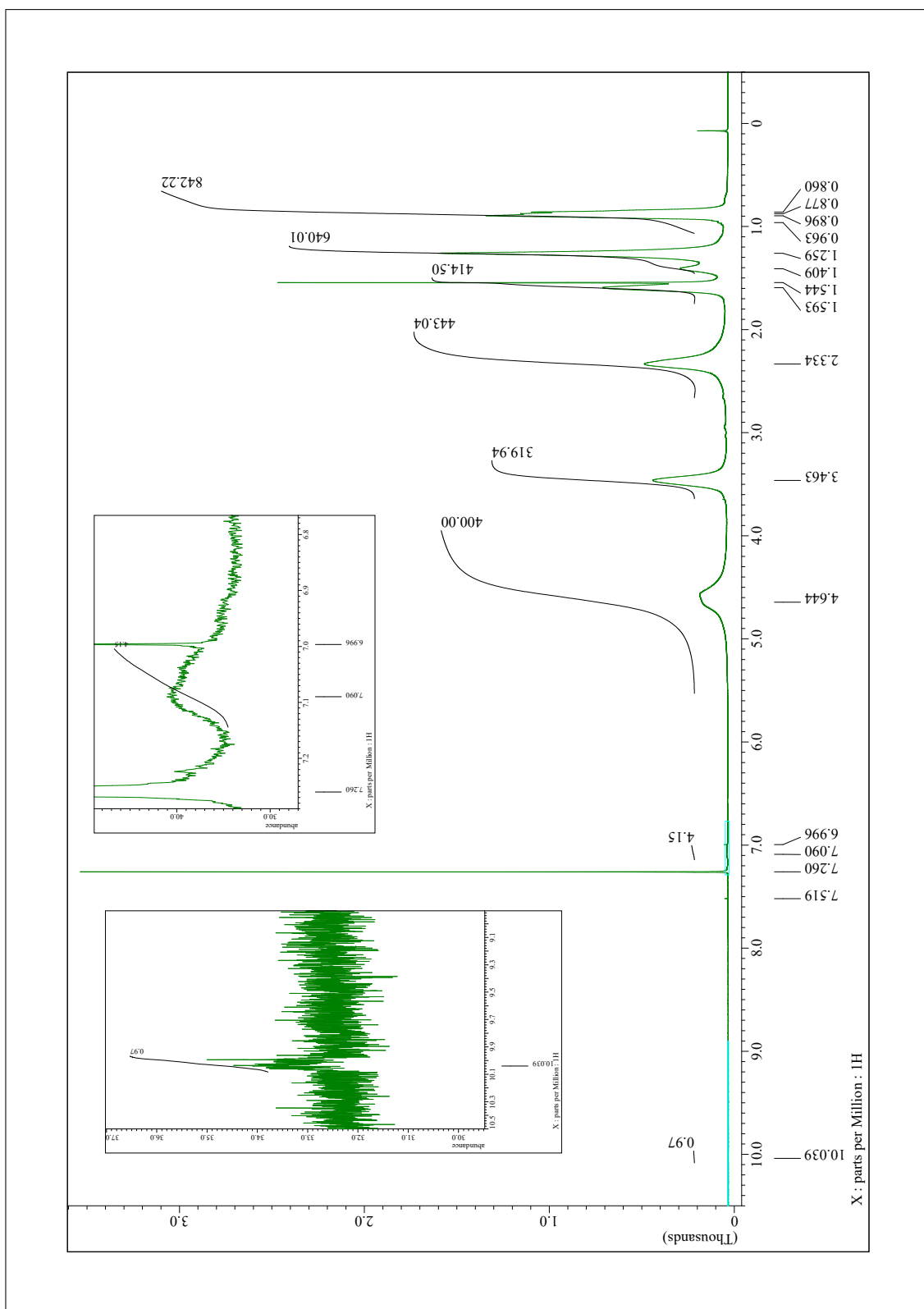


Figure S7. <sup>1</sup>H NMR spectrum of **3a(40/60)** in CDCl<sub>3</sub>.

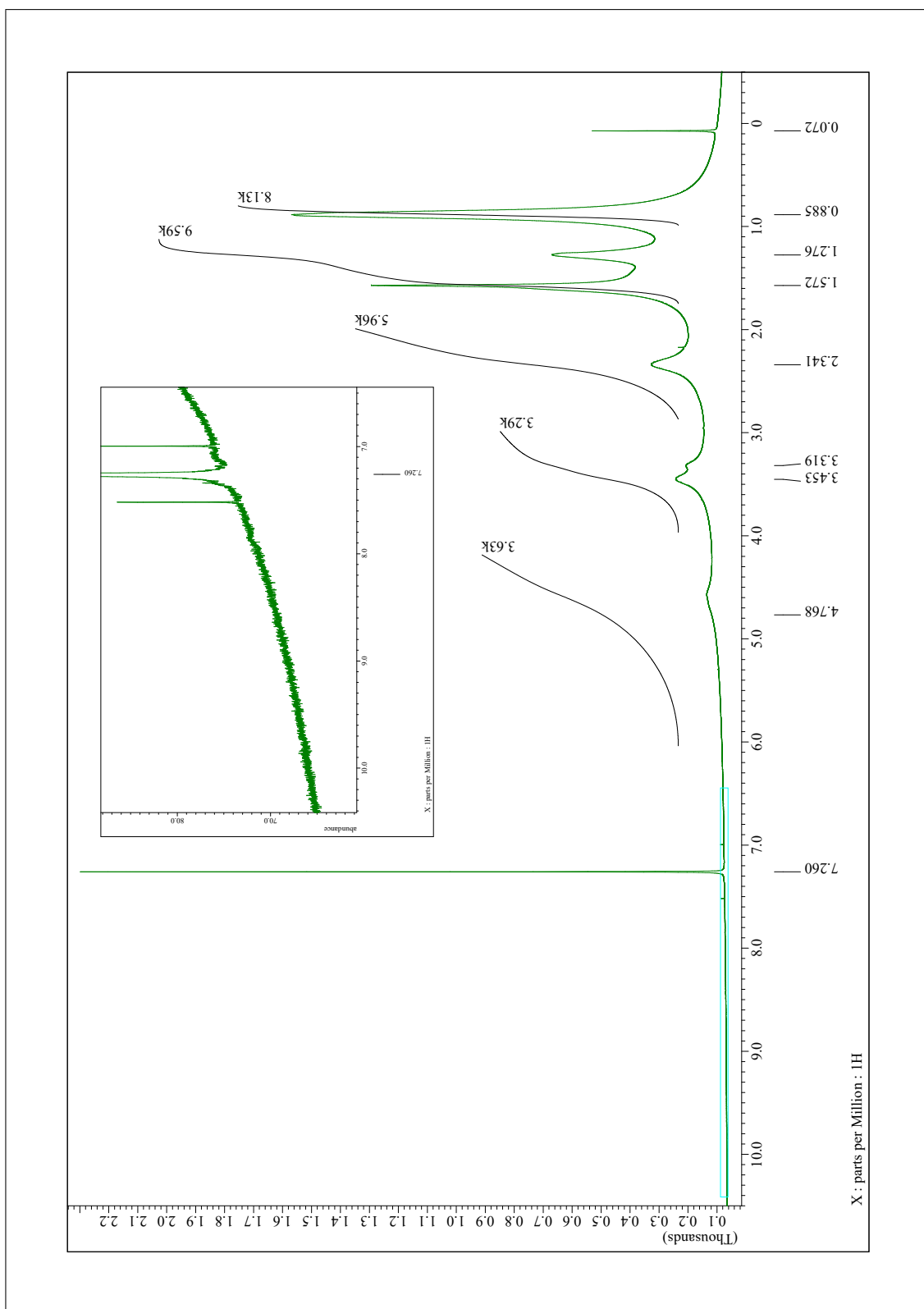


Figure S8.  $^1\text{H}$  NMR spectrum of **3b(350/650)** in  $\text{CDCl}_3$ .

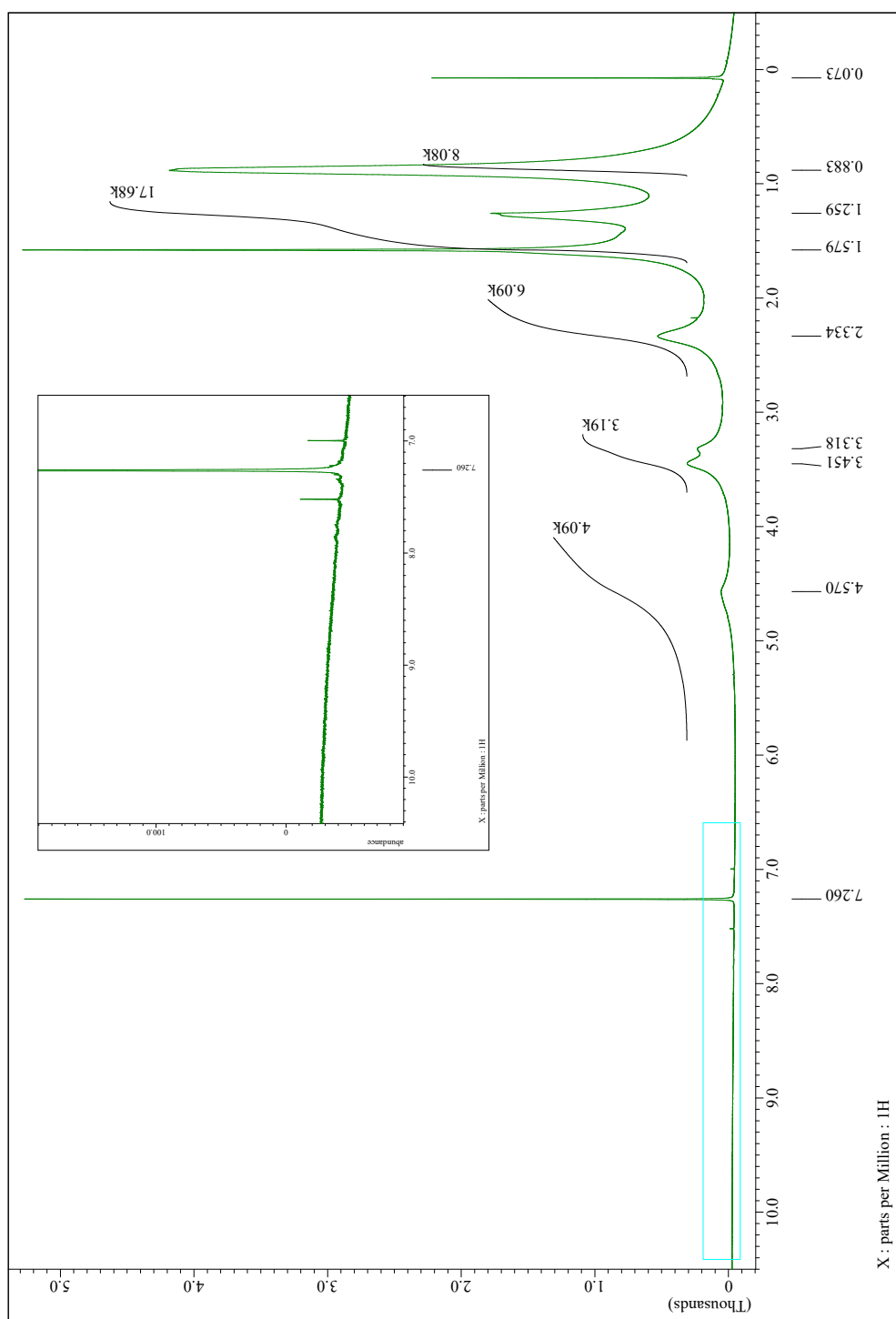


Figure S9.  $^1\text{H}$  NMR spectrum of **3b**(400/600) in  $\text{CDCl}_3$ .

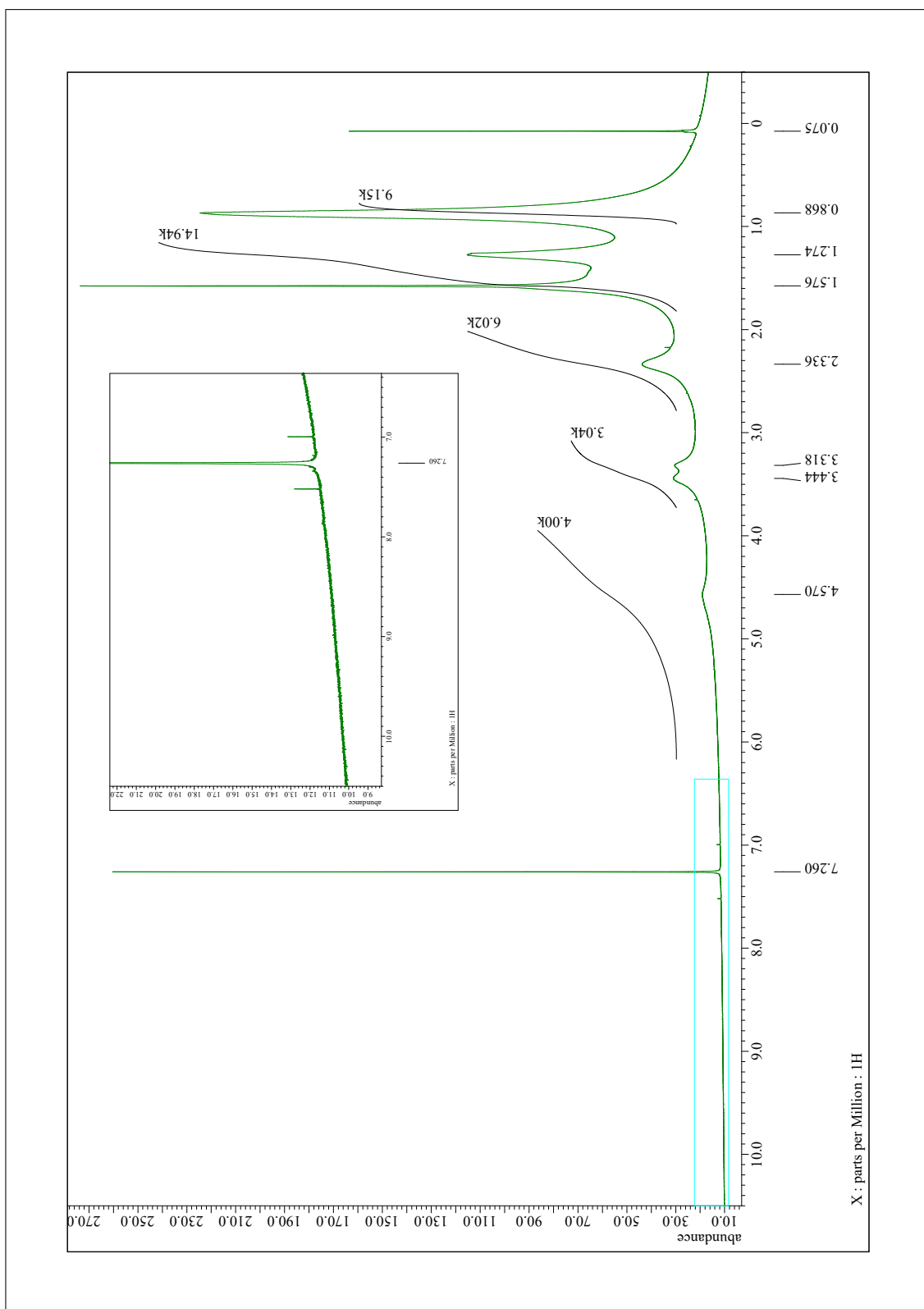


Figure S10.  $^1\text{H}$  NMR spectrum of **3b(500/500)** in  $\text{CDCl}_3$ .

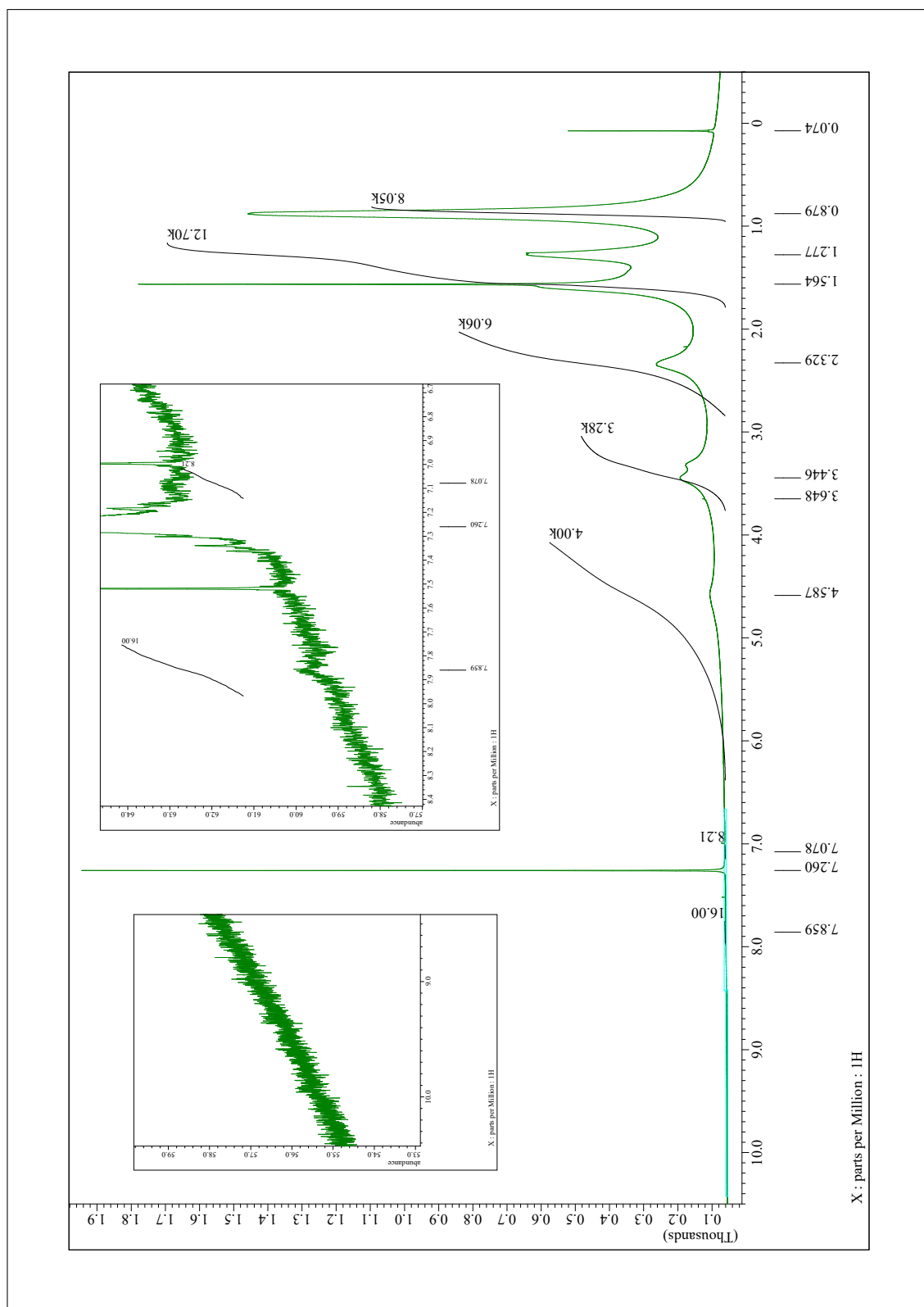


Figure S11. <sup>1</sup>H NMR spectrum of **3b**(400/600/2) in CDCl<sub>3</sub>.

## 9 UV-vis and CD Spectra of New Compounds

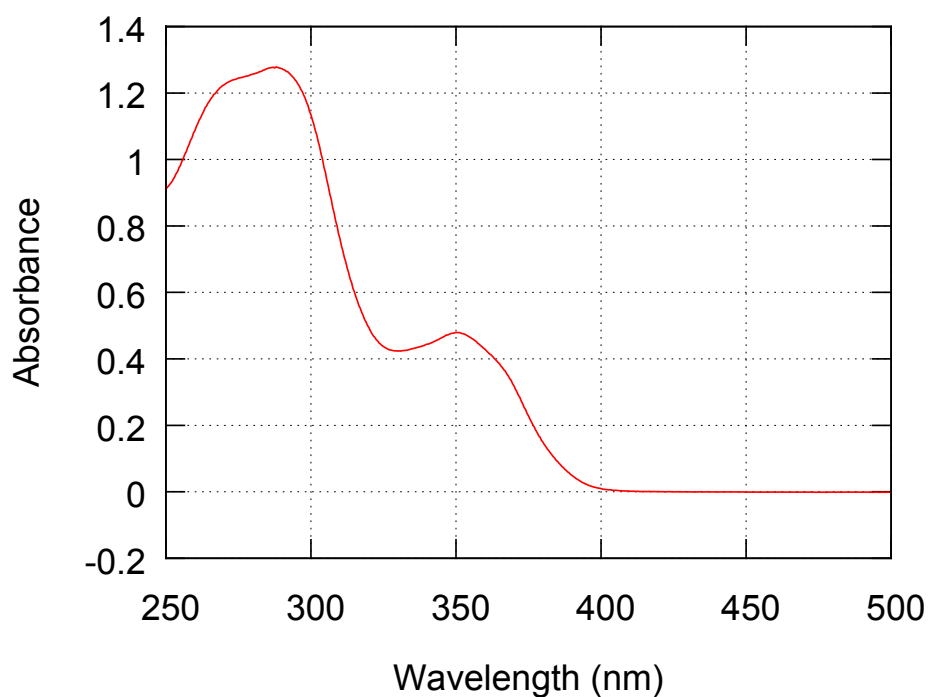


Figure S12. UV-vis absorption spectrum of **1a(100)** in *n*-pentane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

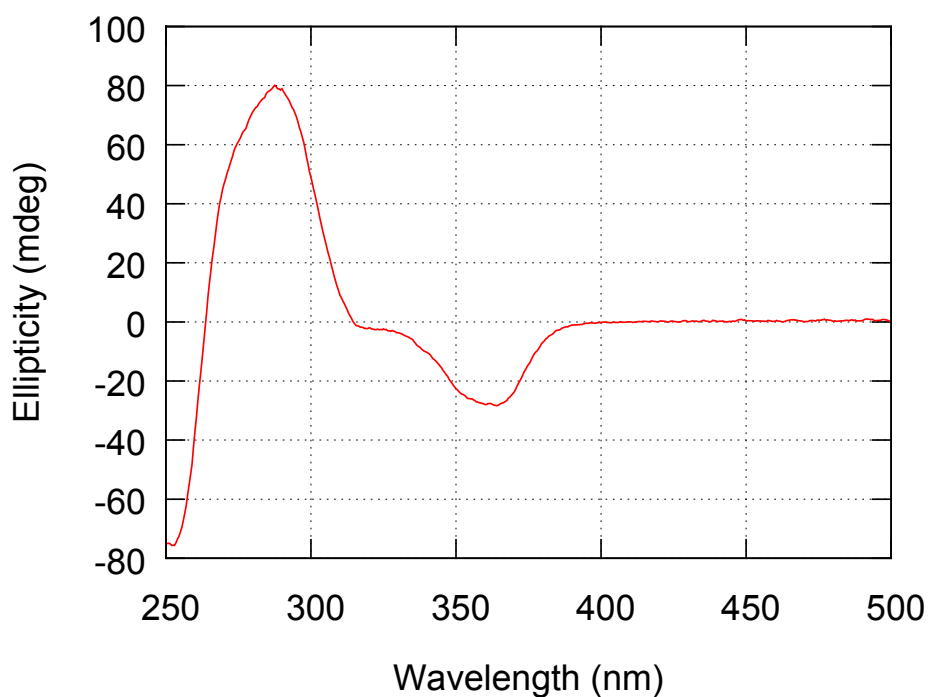


Figure S13. CD spectrum of **1a(100)** in *n*-pentane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

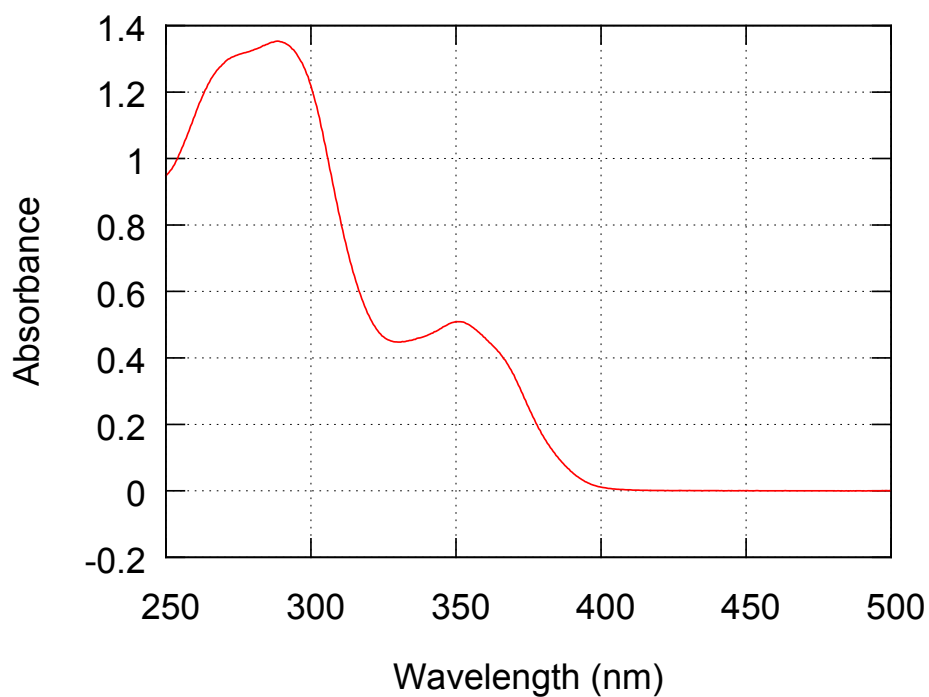


Figure S14. UV-vis absorption spectrum of **1a(100)** in *n*-hexane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

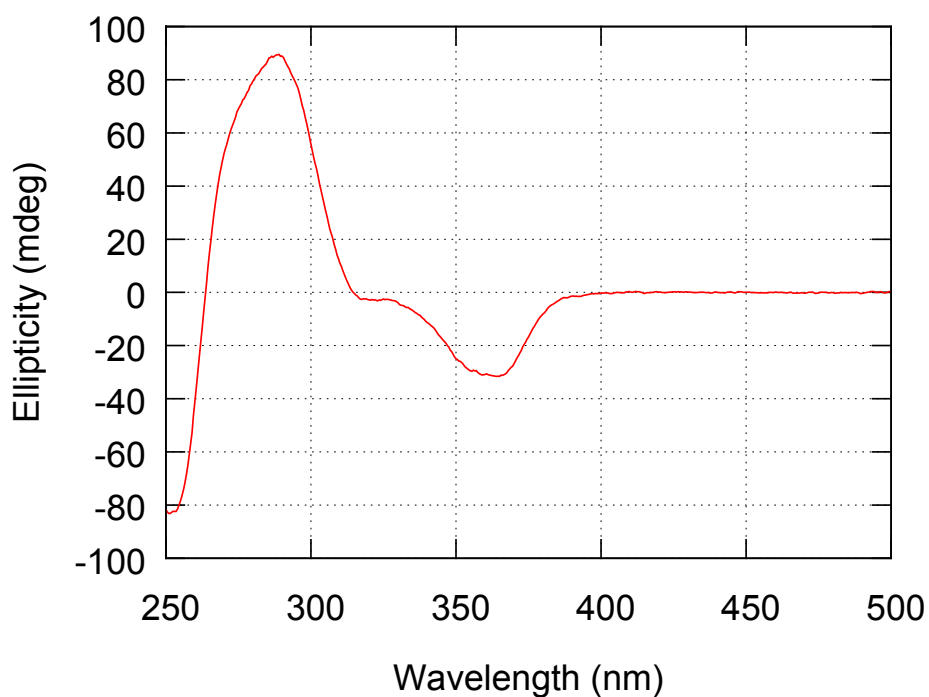


Figure S15. CD spectrum of **1a(100)** in *n*-hexane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

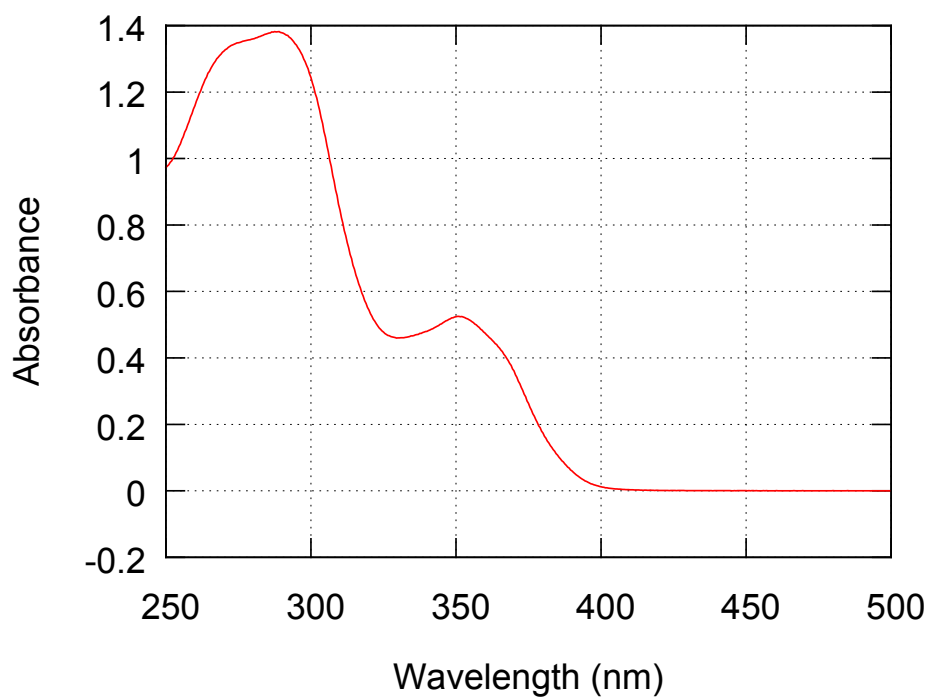


Figure S16. UV-vis absorption spectrum of **1a(100)** in *n*-heptane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

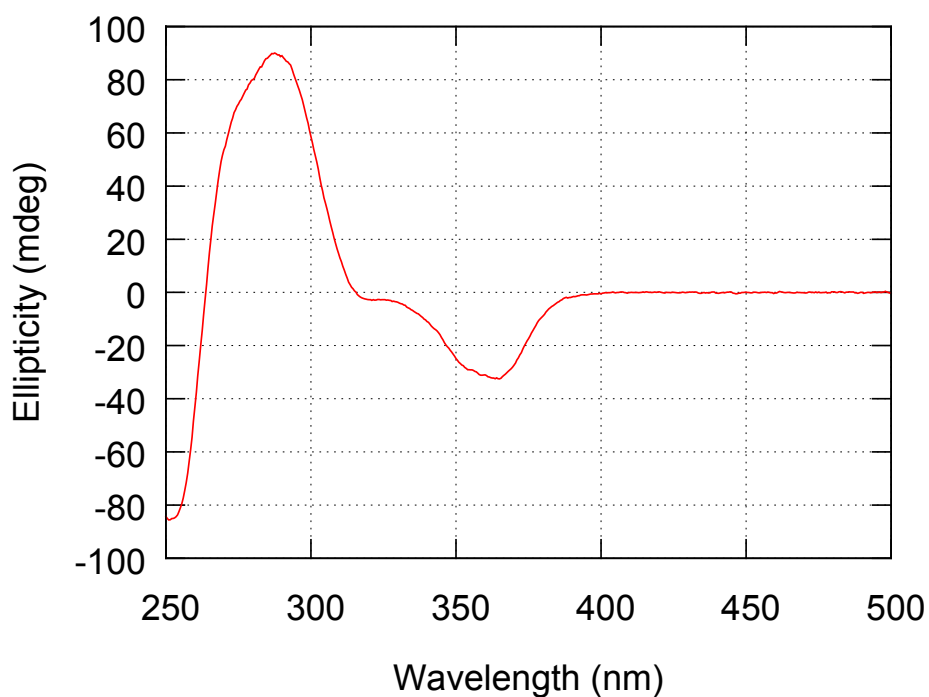


Figure S17. CD spectrum of **1a(100)** in *n*-heptane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

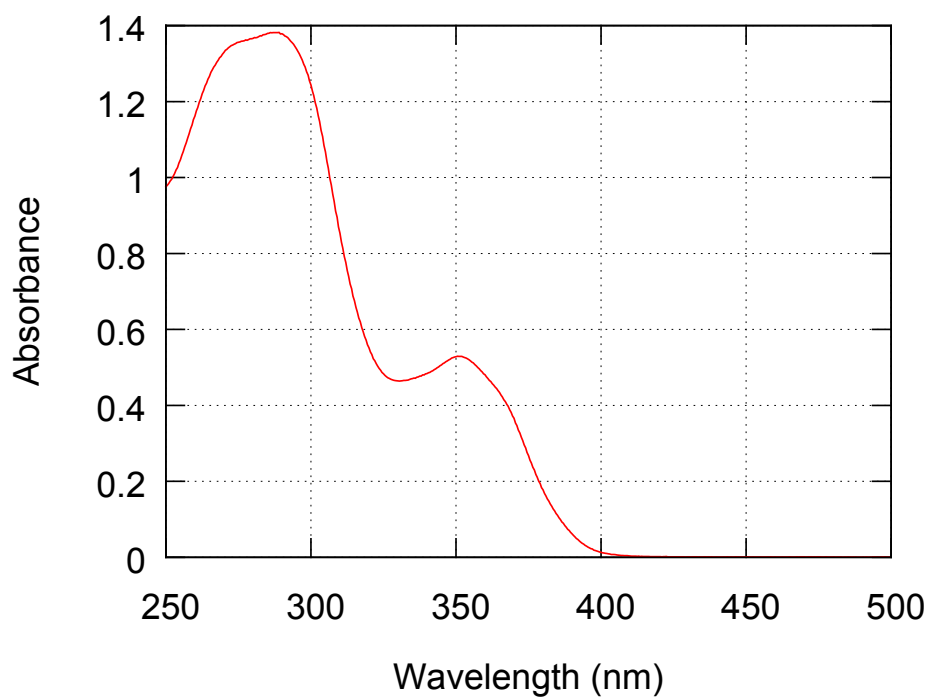


Figure S18. UV-vis absorption spectrum of **1a(100)** in *n*-octane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

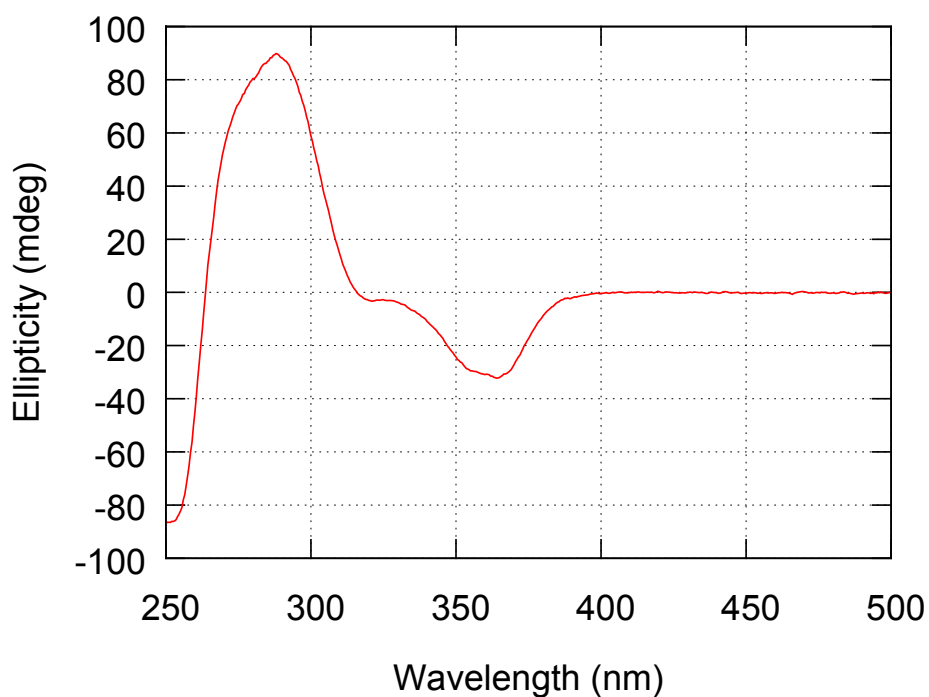


Figure S19. CD spectrum of **1a(100)** in *n*-octane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

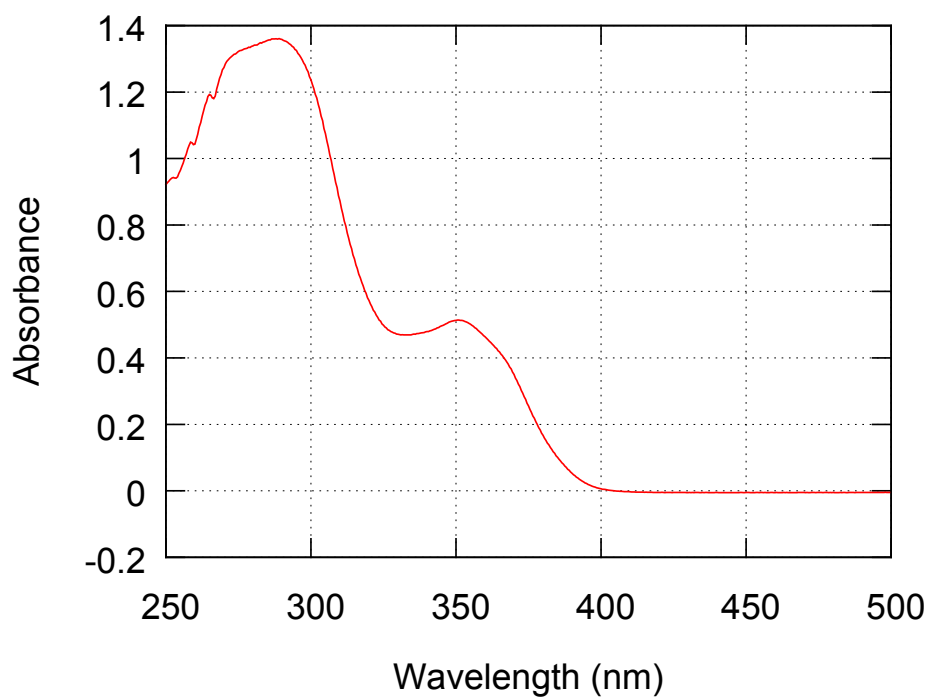


Figure S20. UV-vis absorption spectrum of **1a(100)** in *n*-nonane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

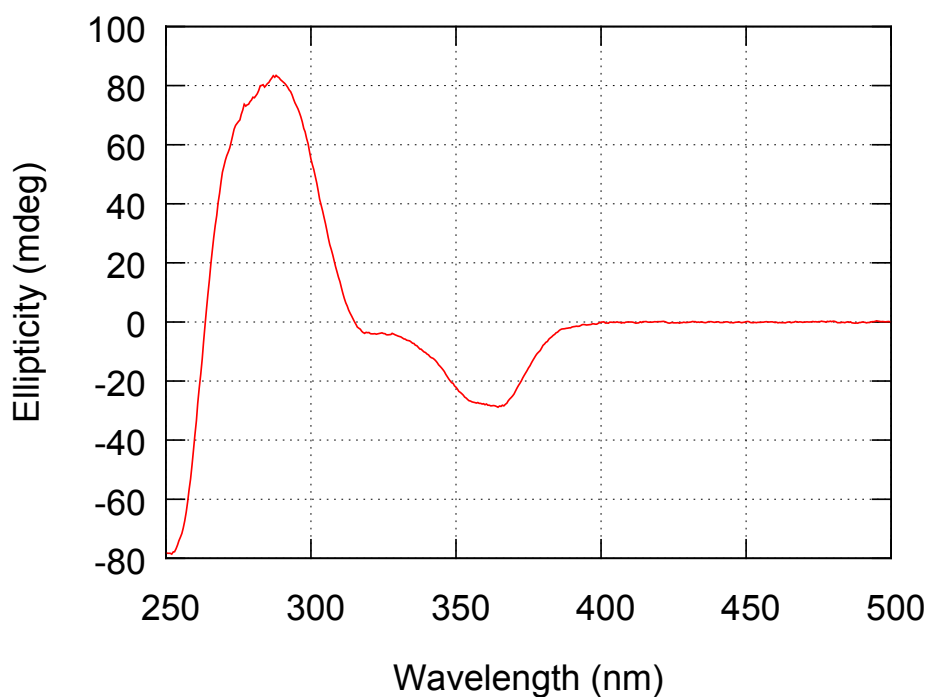


Figure S21. CD spectrum of **1a(100)** in *n*-nonane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

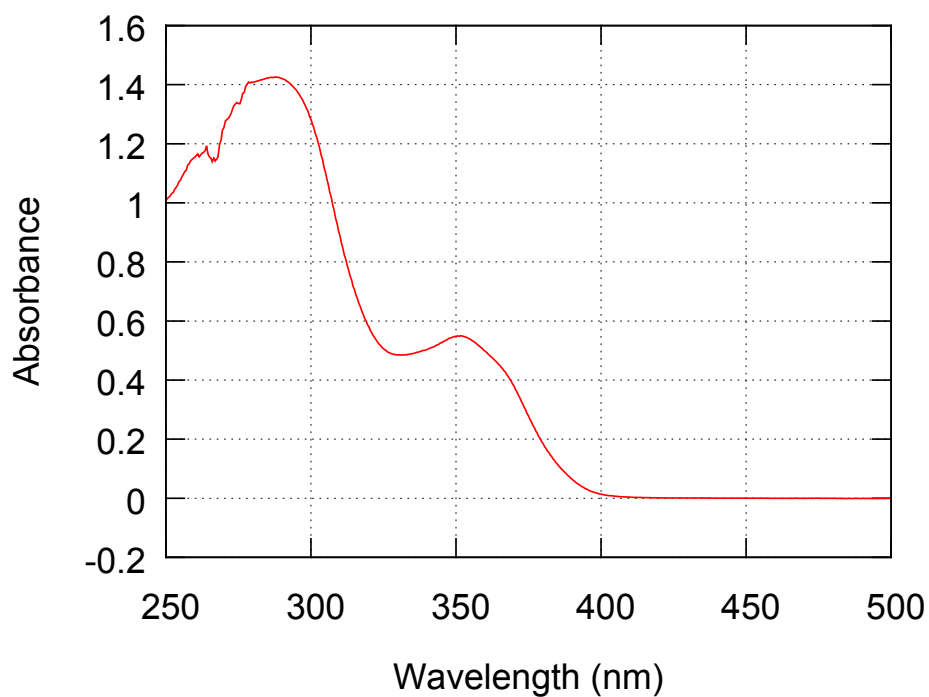


Figure S22. UV-vis absorption spectrum of **1a(100)** in *n*-decane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

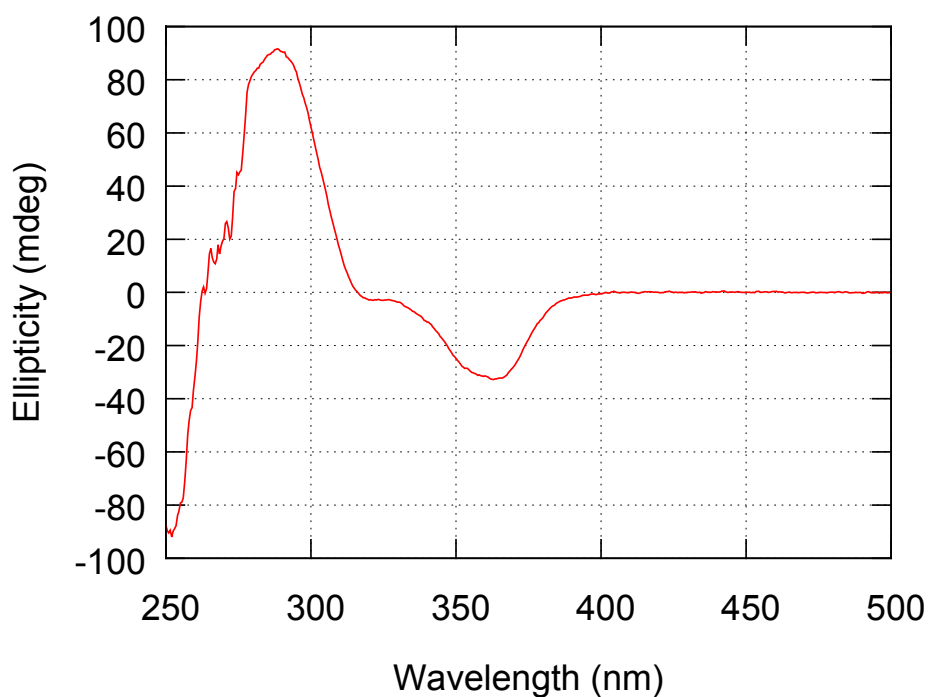


Figure S23. CD spectrum of **1a(100)** in *n*-decane ( $3.12 \times 10^{-2}$  g/L, path length = 10 mm).

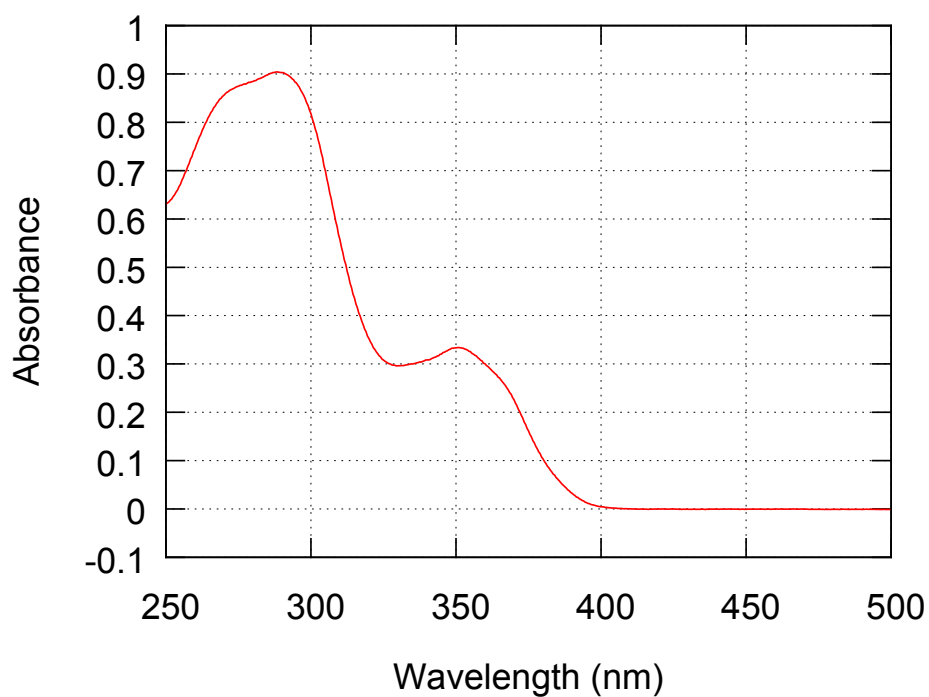


Figure S24. UV-vis absorption spectrum of **1b(100)** in *n*-pentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

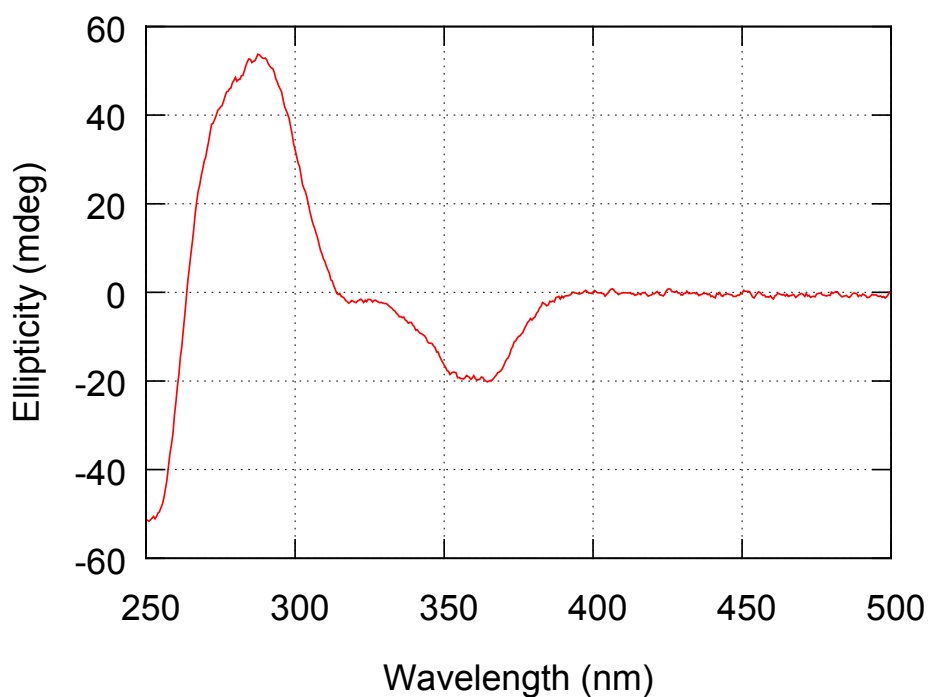


Figure S25. CD spectrum of **1b(100)** in *n*-pentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

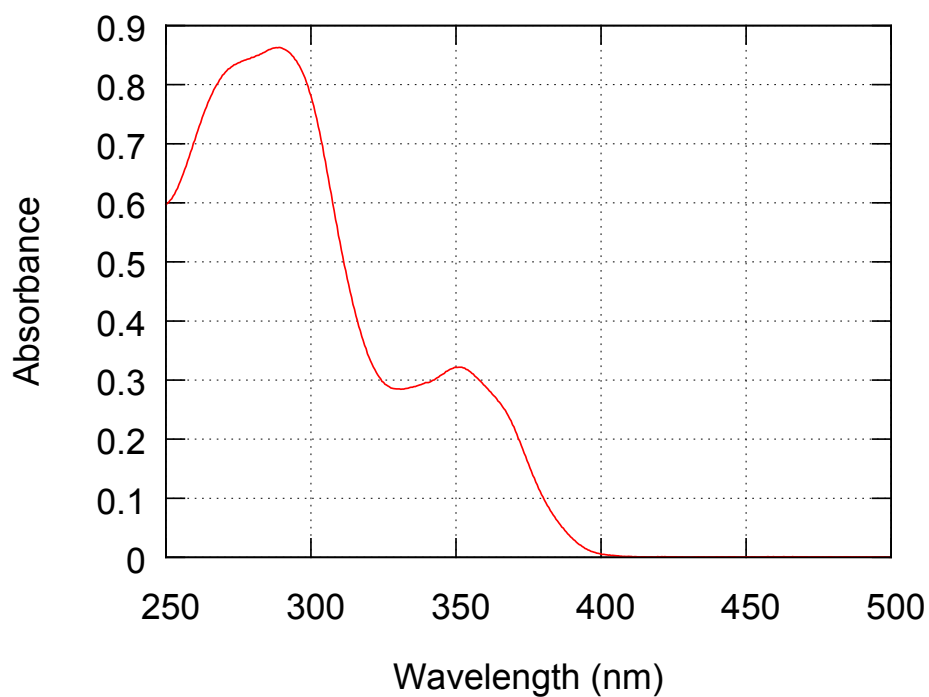


Figure S26. UV-vis absorption spectrum of **1b(100)** in *n*-hexane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

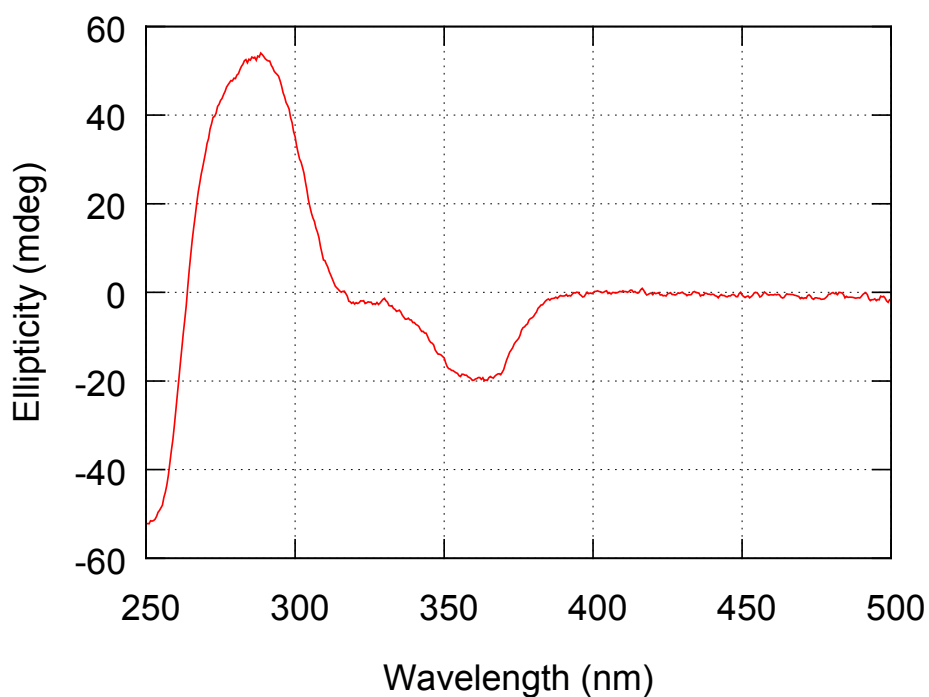


Figure S27. CD spectrum of **1b(100)** in *n*-hexane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

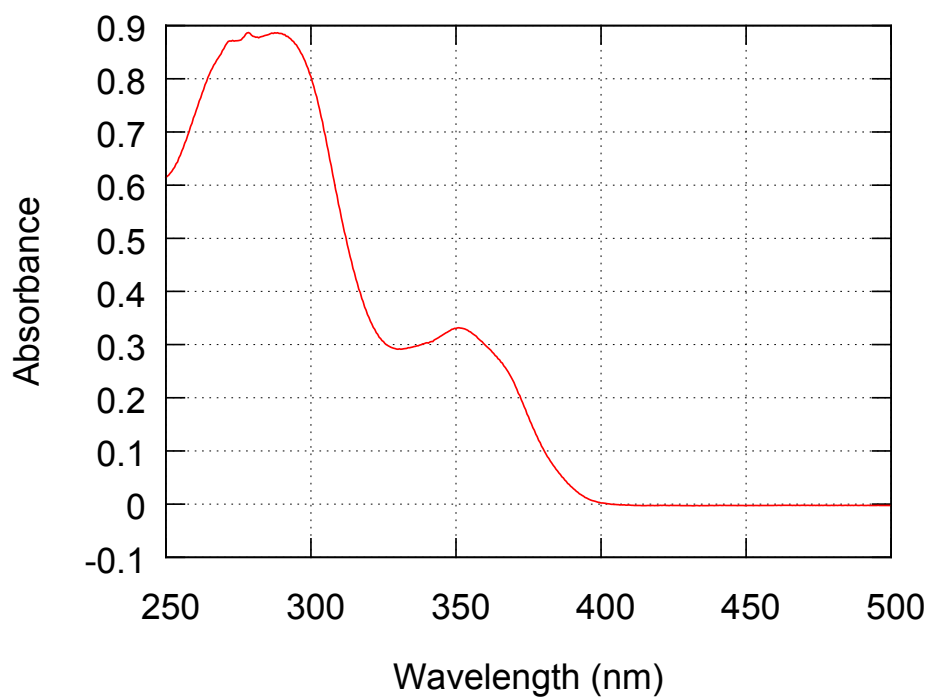


Figure S28. UV-vis absorption spectrum of **1b(100)** in *n*-heptane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

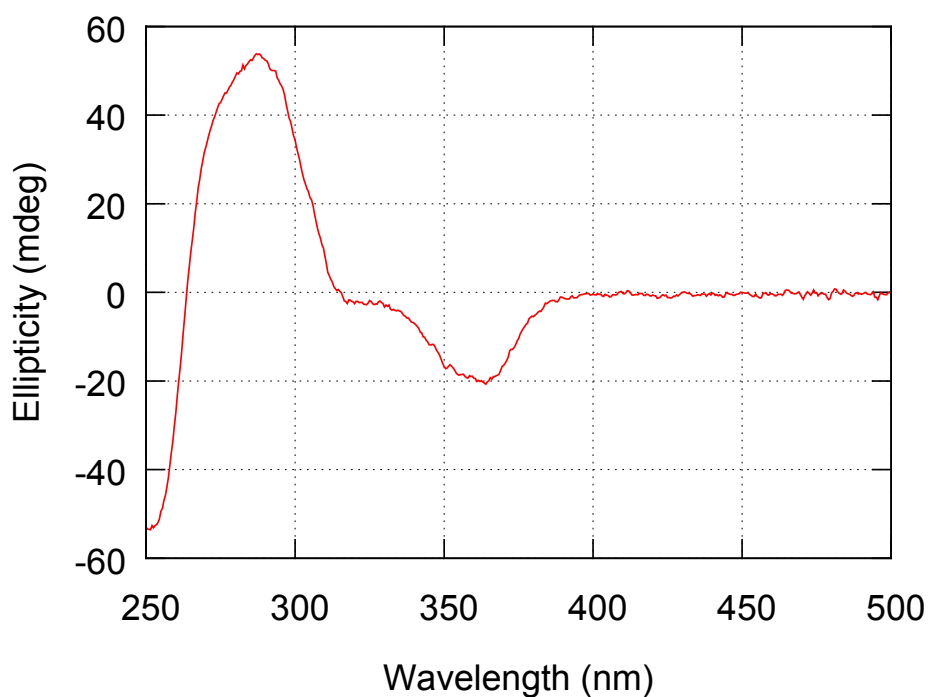


Figure S29. CD spectrum of **1b(100)** in *n*-heptane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

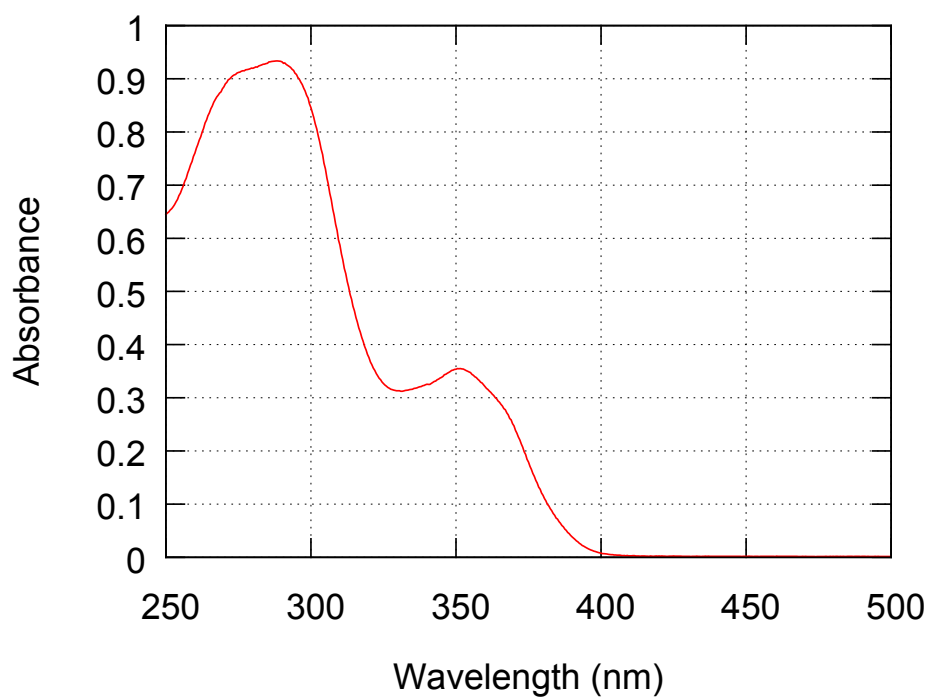


Figure S30. UV-vis absorption spectrum of **1b(100)** in *n*-octane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

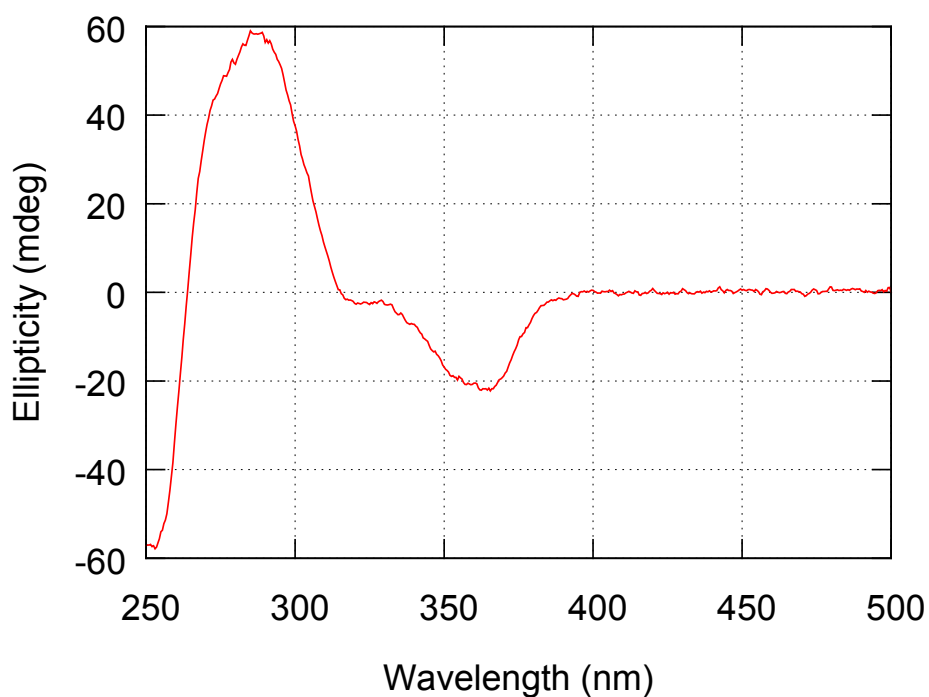


Figure S31. CD spectrum of **1b(100)** in *n*-octane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

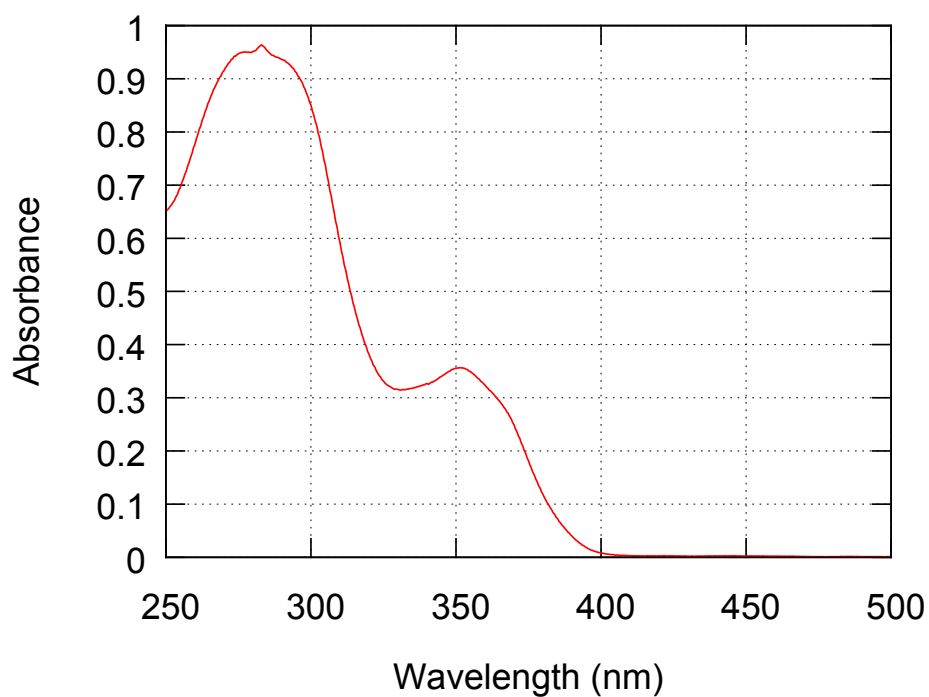


Figure S32. UV-vis absorption spectrum of **1b(100)** in *n*-nonane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

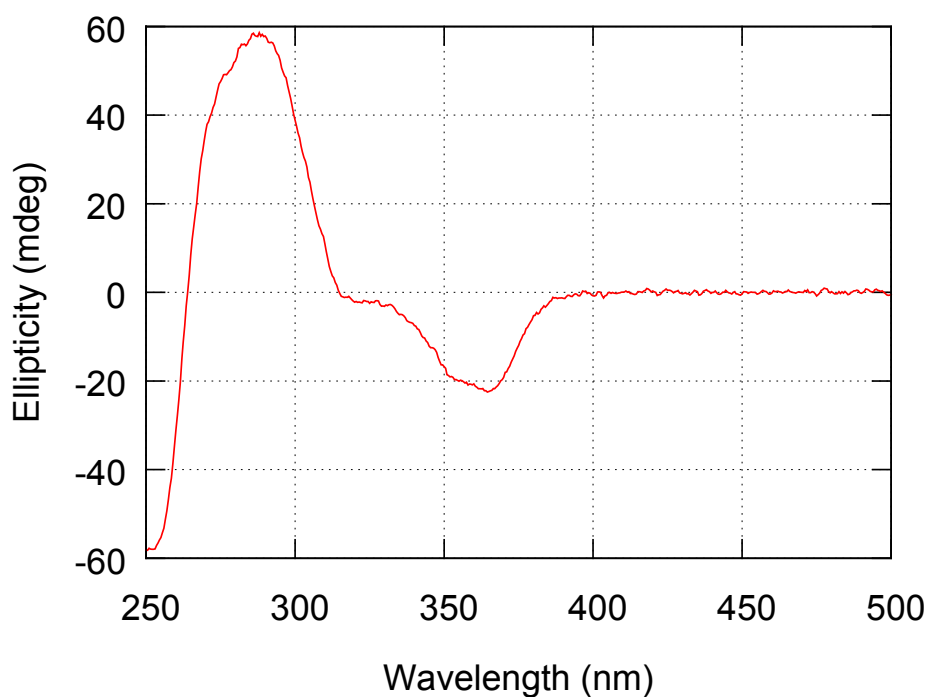


Figure S33. CD spectrum of **1b(100)** in *n*-nonane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

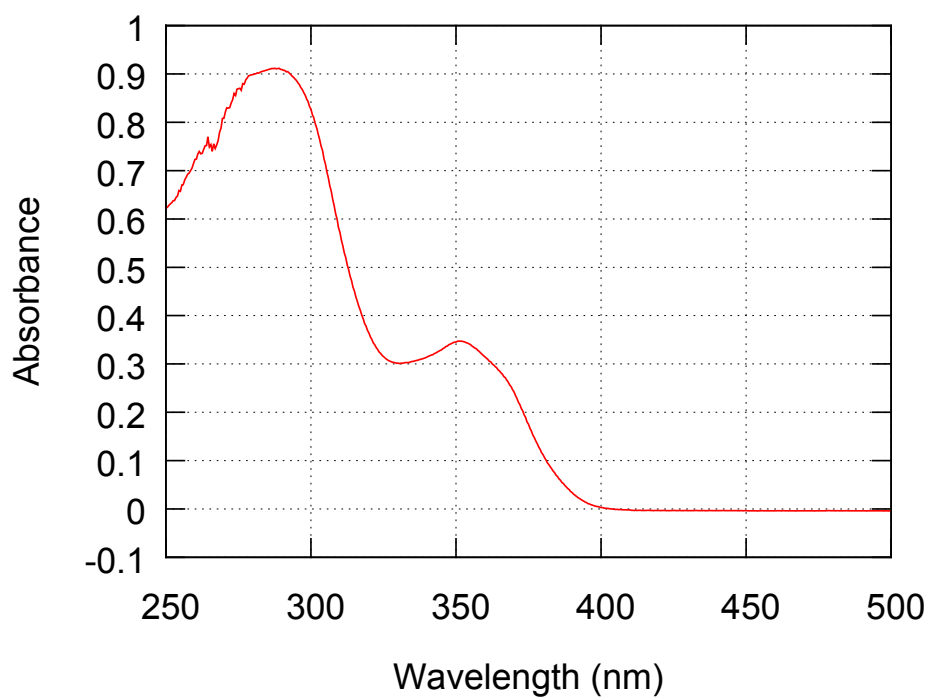


Figure S34. UV-vis absorption spectrum of **1b(100)** in *n*-decane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

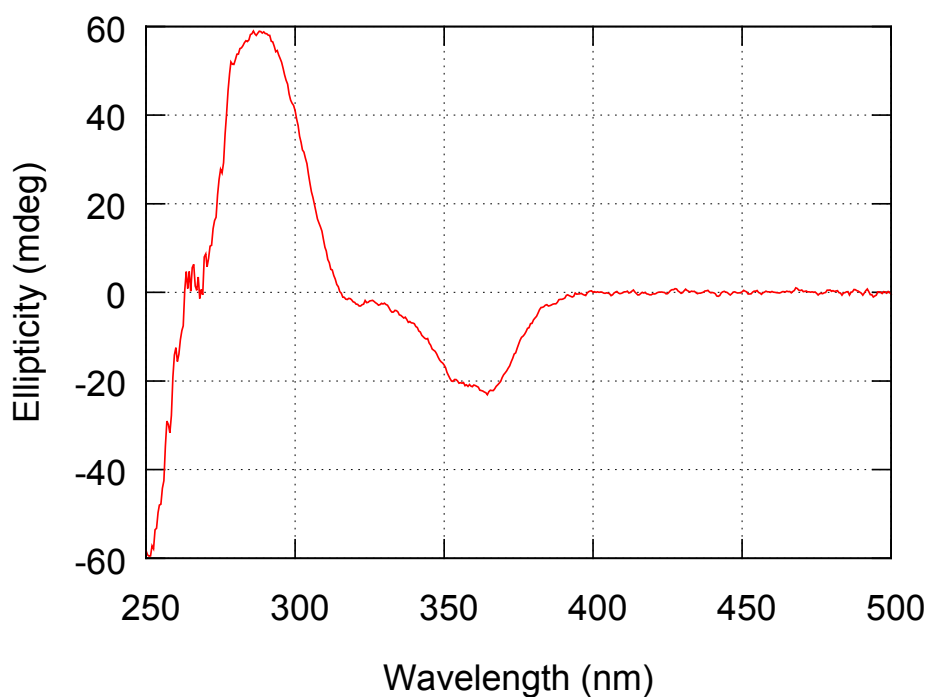


Figure S35. CD spectrum of **1b(100)** in *n*-decane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

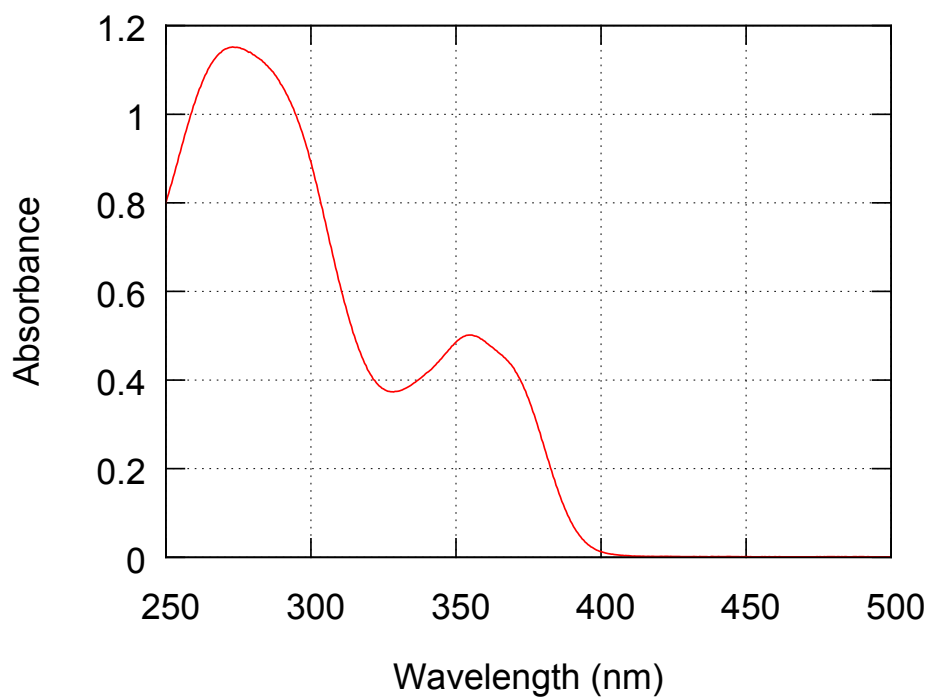


Figure S36. UV-vis absorption spectrum of **2a(40/60)** in *n*-pentane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

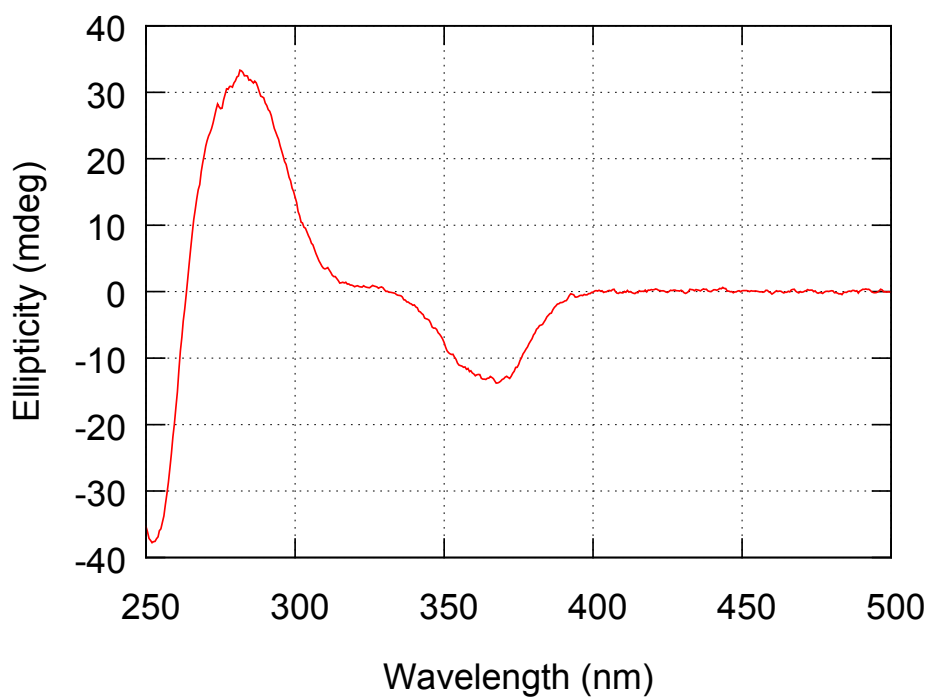


Figure S37. CD spectrum of **2a(40/60)** in *n*-pentane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

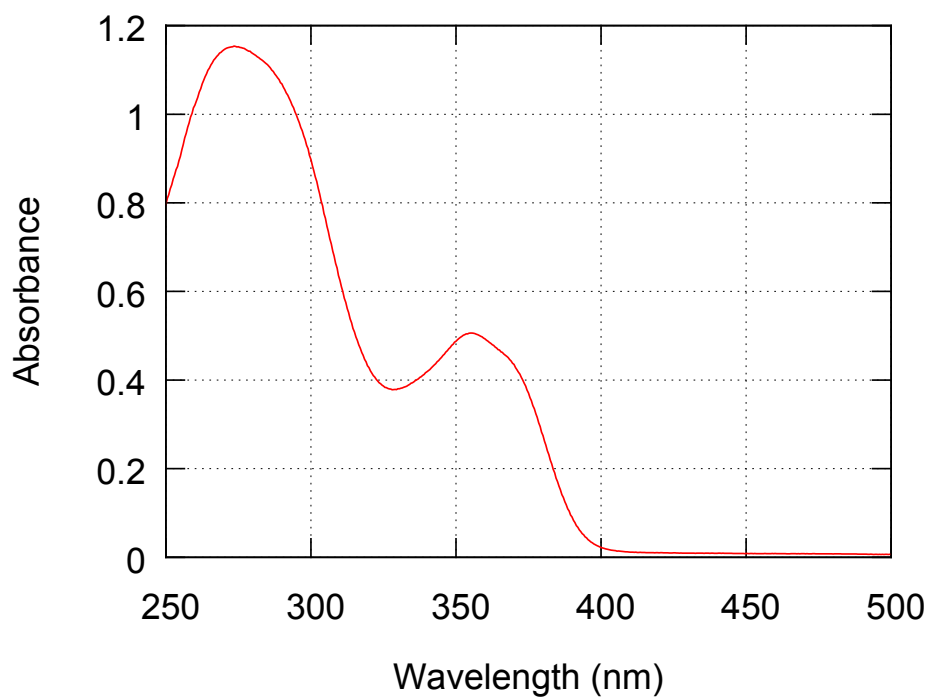


Figure S38. UV-vis absorption spectrum of **2a(40/60)** in *n*-hexane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

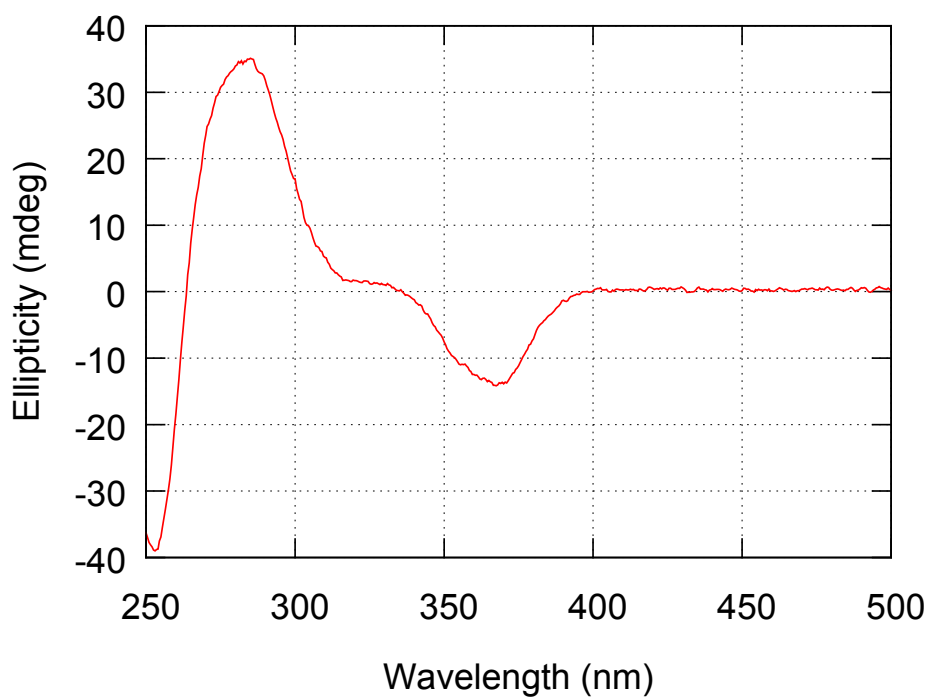


Figure S39. CD spectrum of **2a(40/60)** in *n*-hexane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

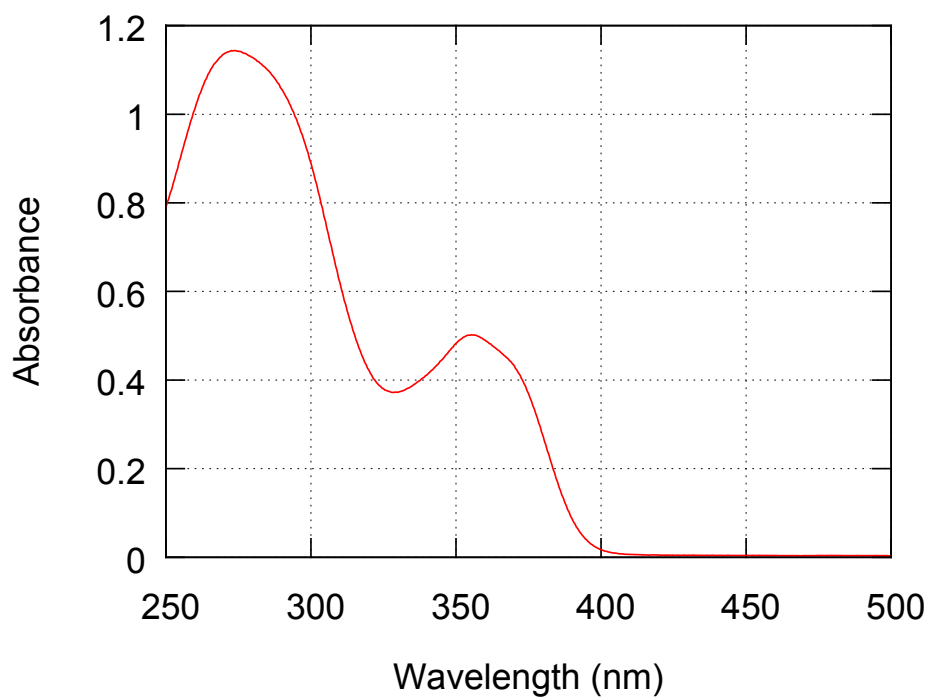


Figure S40. UV-vis absorption spectrum of **2a(40/60)** in *n*-heptane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

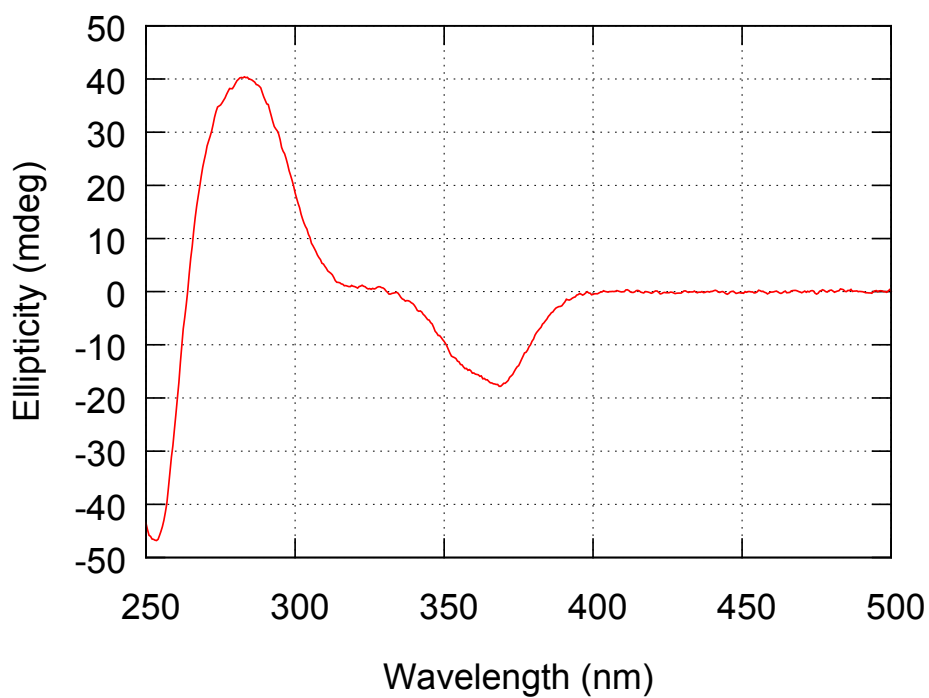


Figure S41. CD spectrum of **2a(40/60)** in *n*-heptane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

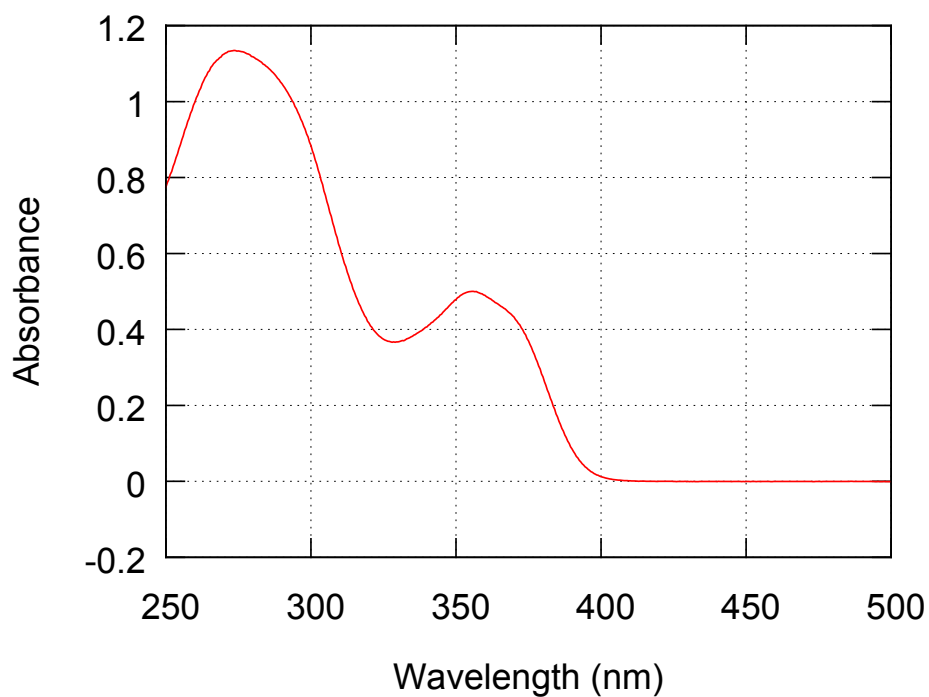


Figure S42. UV-vis absorption spectrum of **2a(40/60)** in *n*-octane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

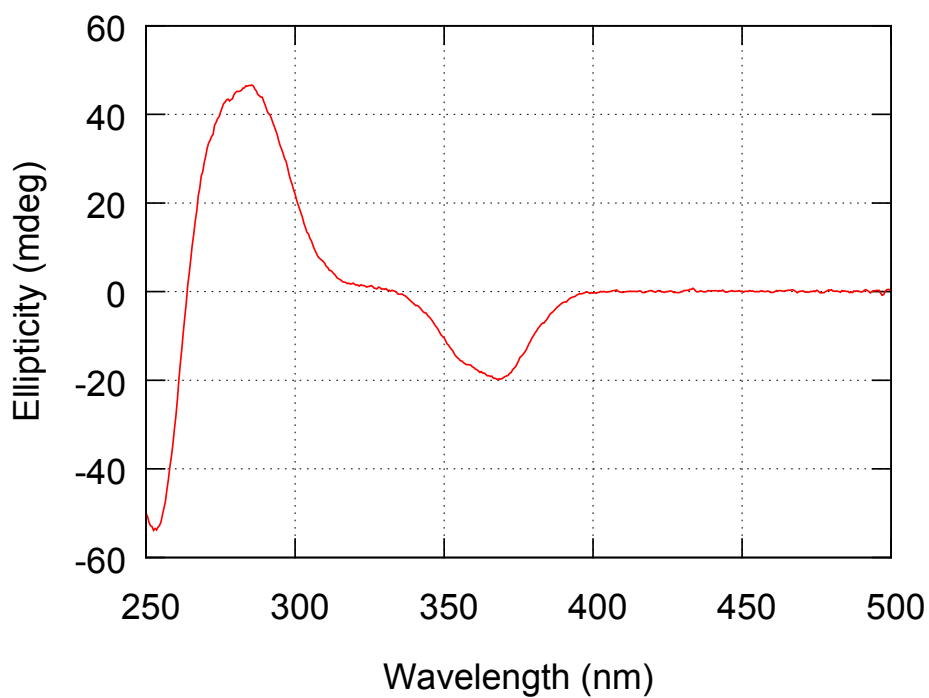


Figure S43. CD spectrum of **2a(40/60)** in *n*-octane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

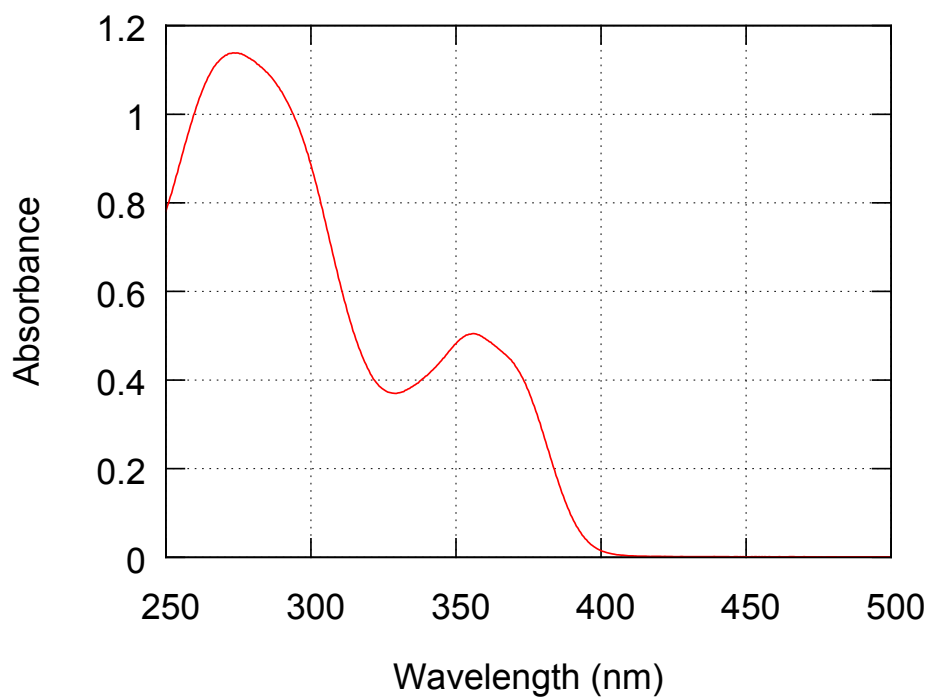


Figure S44. UV-vis absorption spectrum of **2a(40/60)** in *n*-nonane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

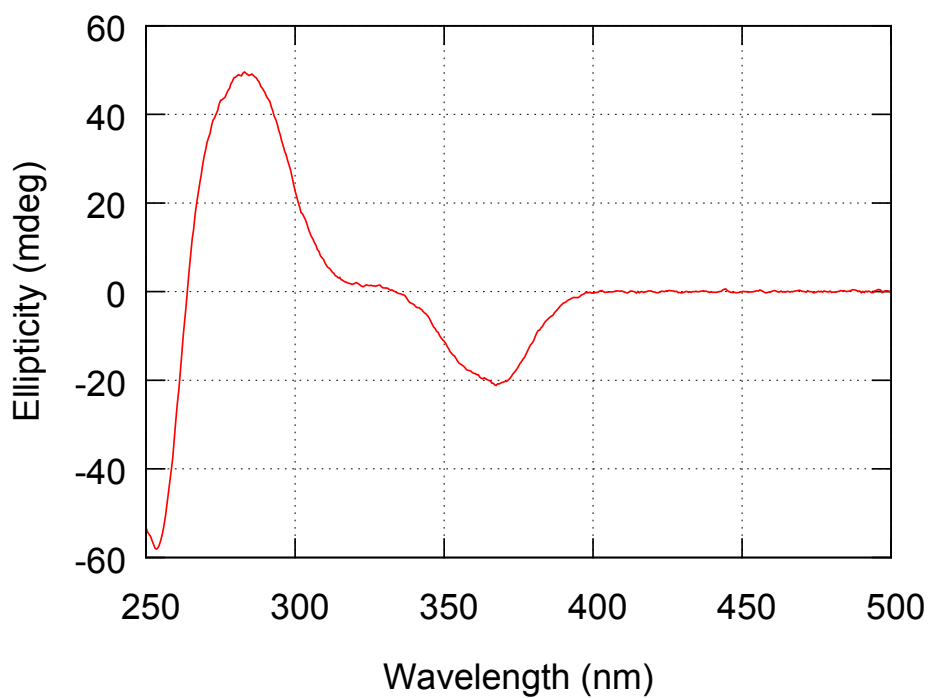


Figure S45. CD spectrum of **2a(40/60)** in *n*-nonane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

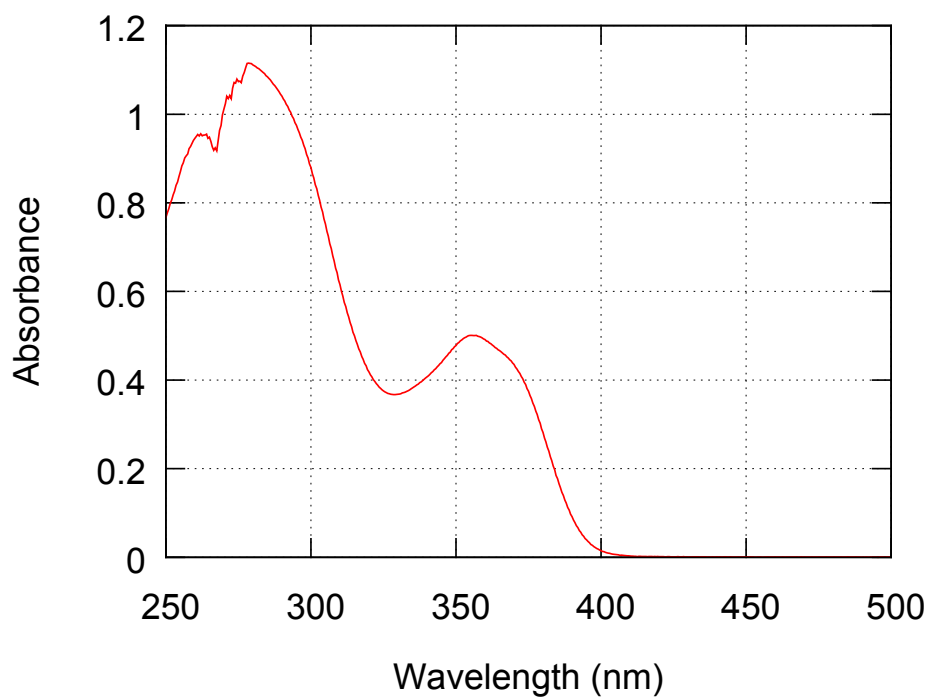


Figure S46. UV-vis absorption spectrum of **2a(40/60)** in *n*-decane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

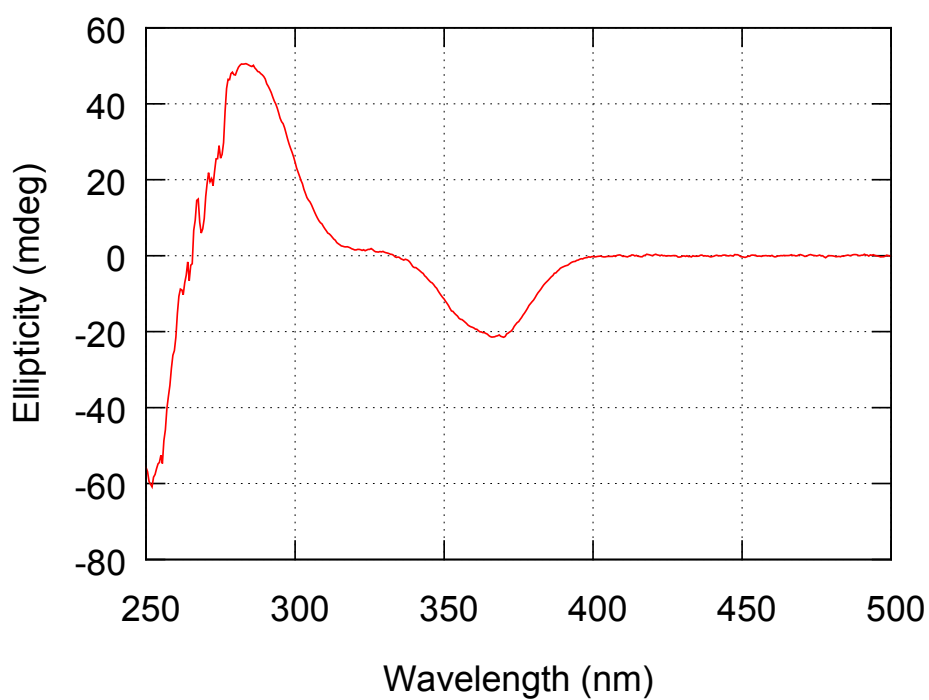


Figure S47. CD spectrum of **2a(40/60)** in *n*-decane ( $2.51 \times 10^{-2}$  g/L, path length = 10 mm).

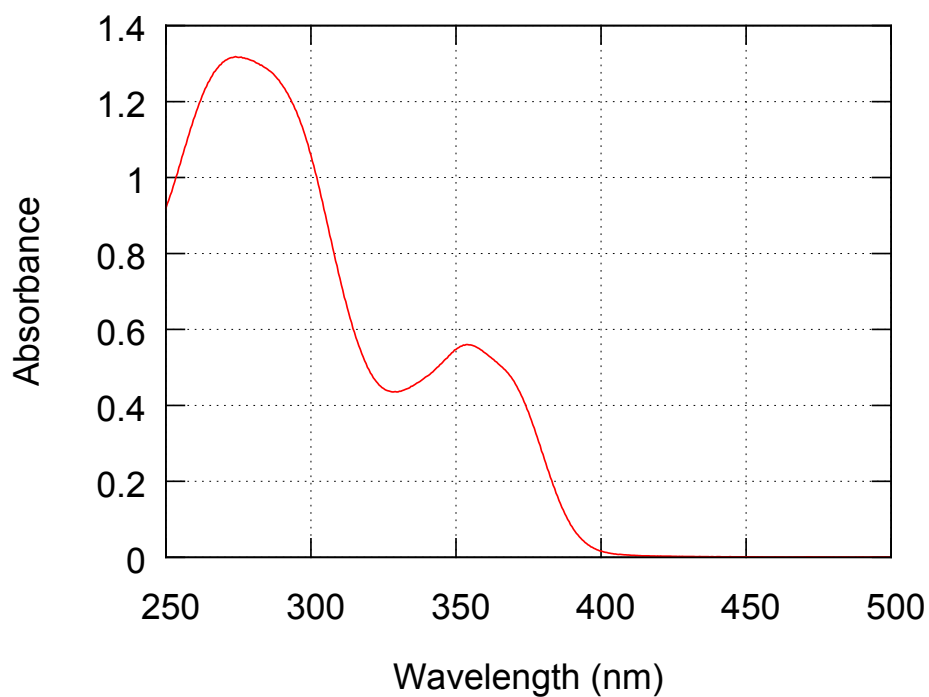


Figure S48. UV-vis absorption spectrum of **2b(40/60)** in *n*-pentane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

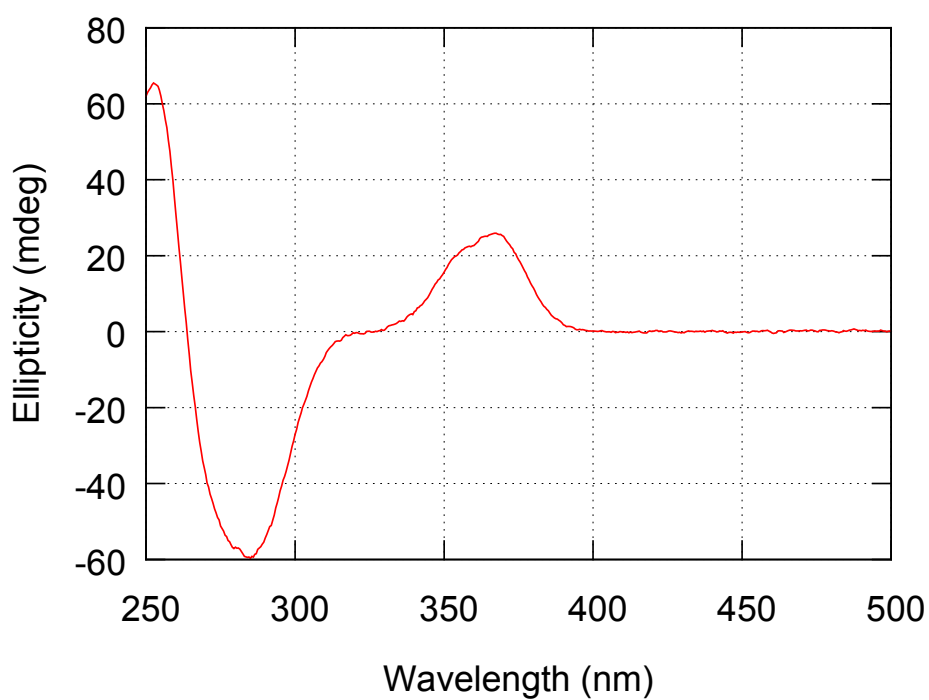


Figure S49. CD spectrum of **2b(40/60)** in *n*-pentane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

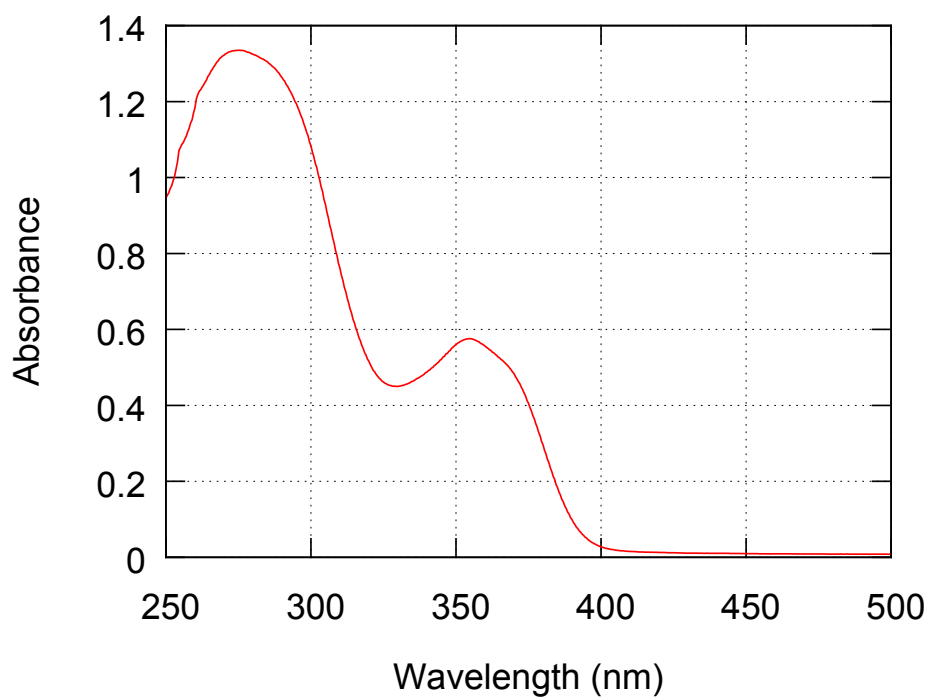


Figure S50. UV-vis absorption spectrum of **2b(40/60)** in *n*-hexane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

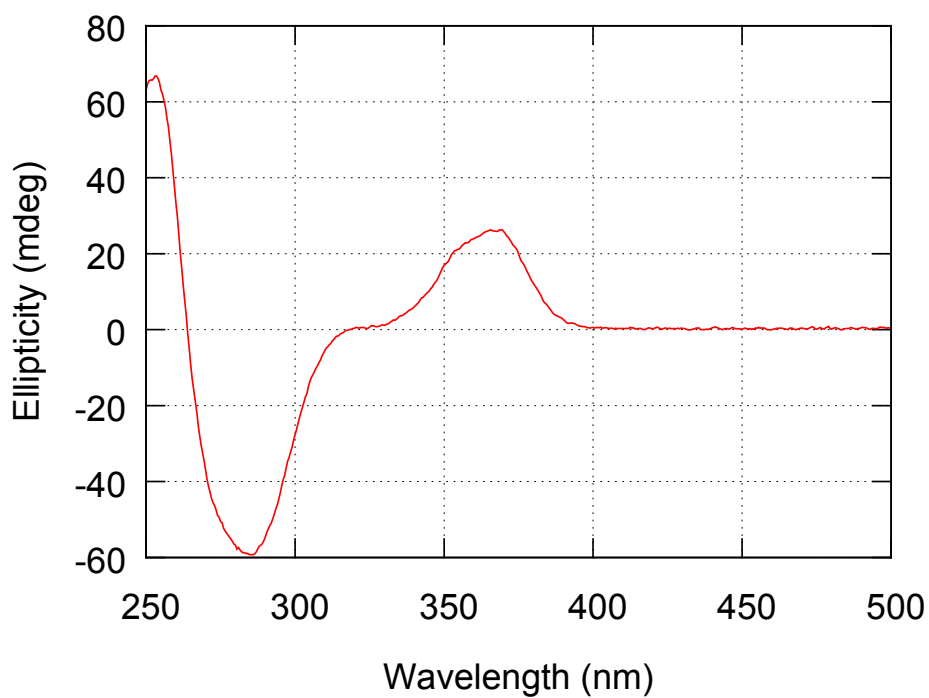


Figure S51. CD spectrum of **2b(40/60)** in *n*-hexane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

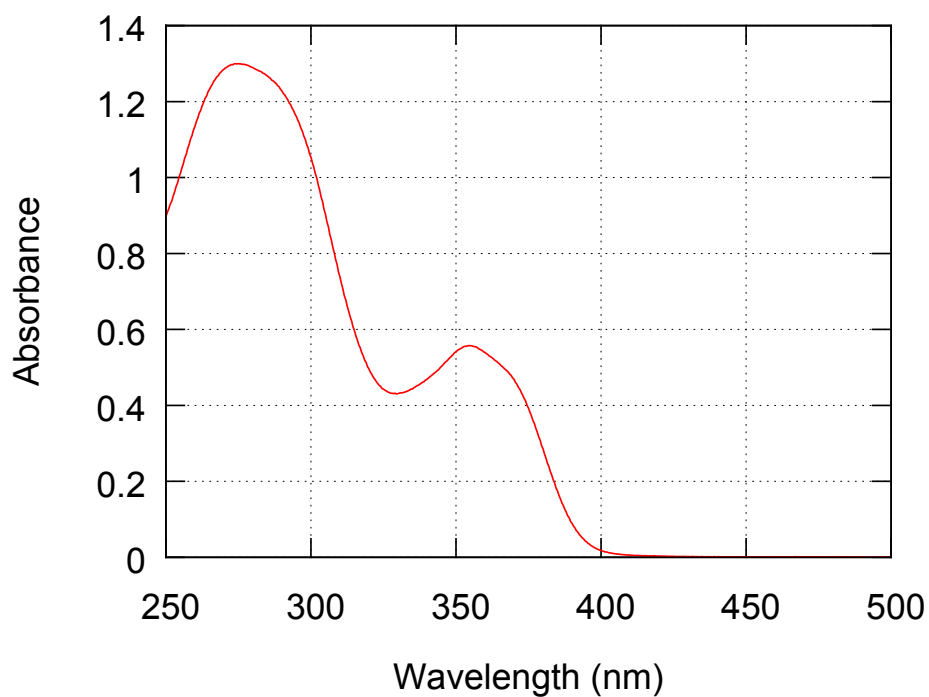


Figure S52. UV-vis absorption spectrum of **2b(40/60)** in *n*-heptane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

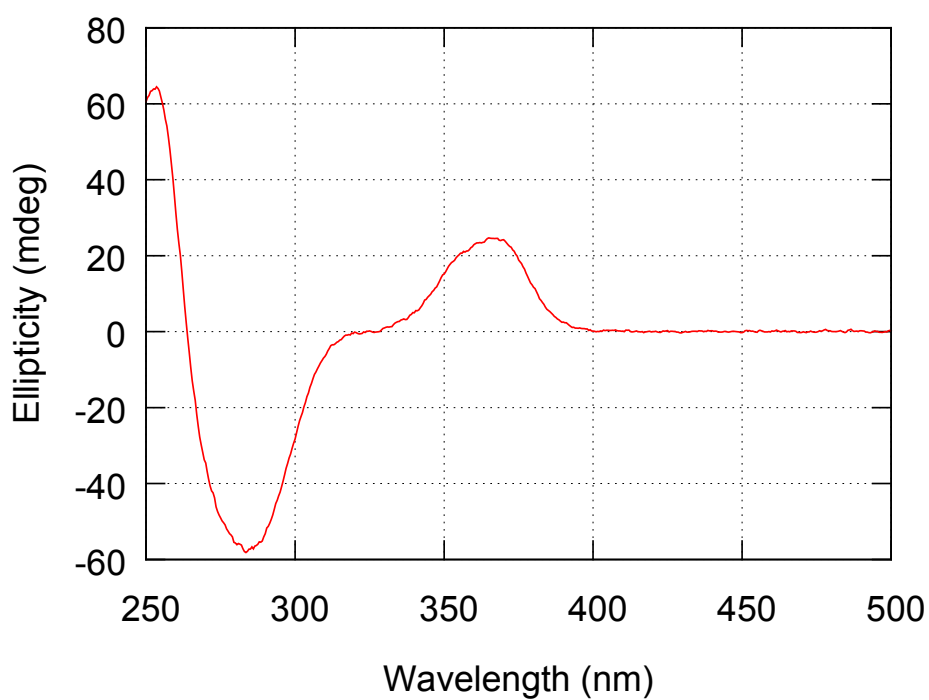


Figure S53. CD spectrum of **2b(40/60)** in *n*-heptane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

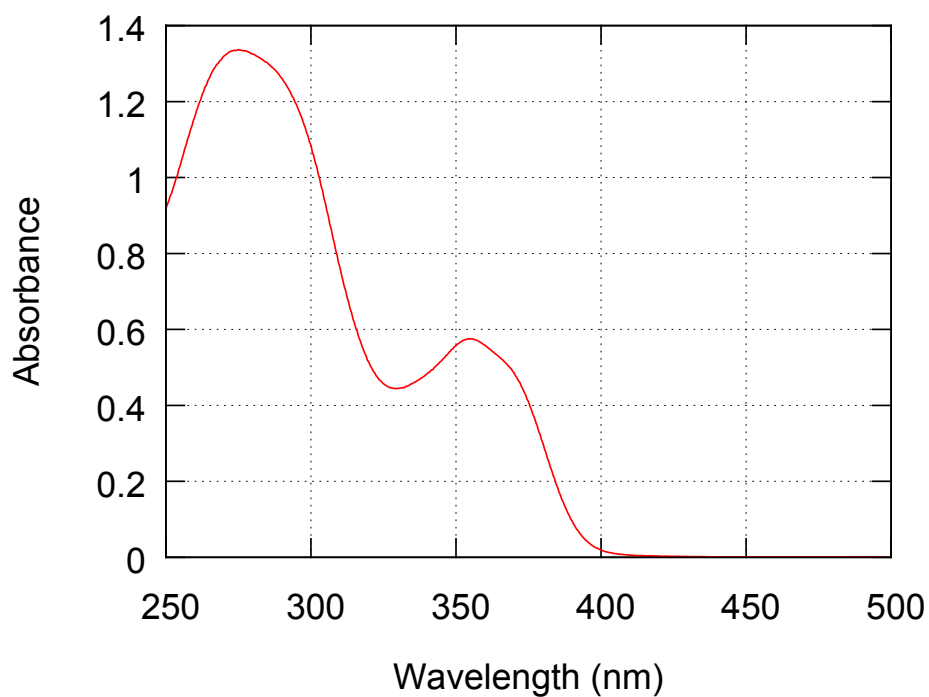


Figure S54. UV-vis absorption spectrum of **2b(40/60)** in *n*-octane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

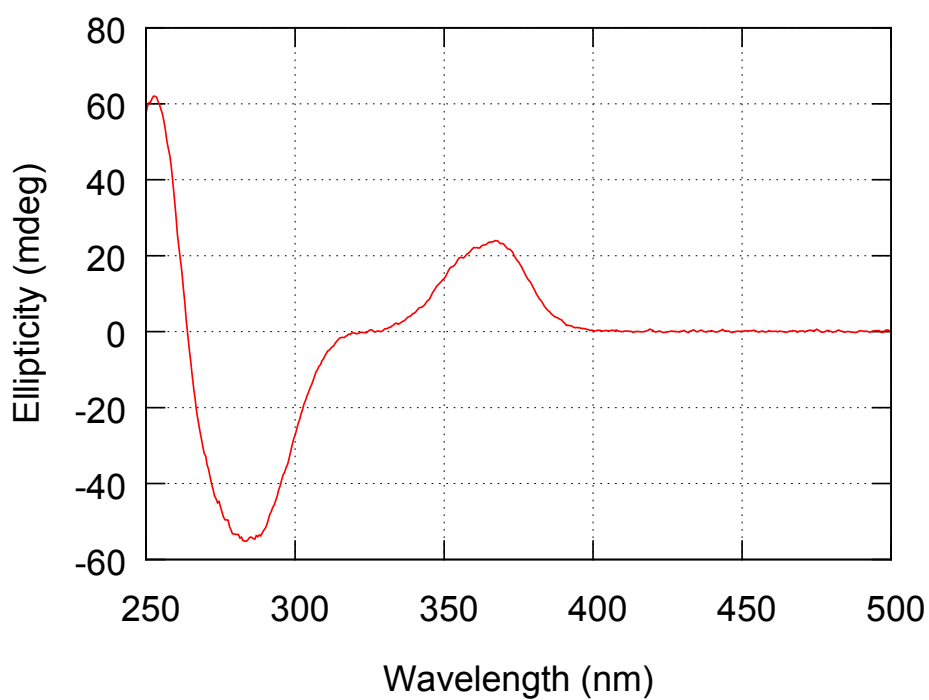


Figure S55. CD spectrum of **2b(40/60)** in *n*-octane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

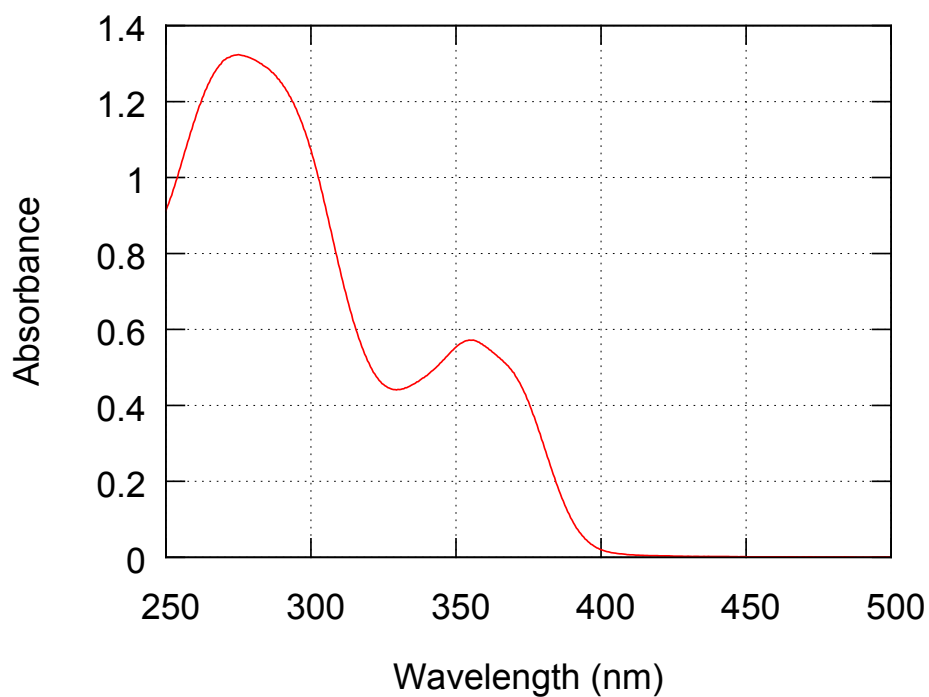


Figure S56. UV-vis absorption spectrum of **2b(40/60)** in *n*-nonane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

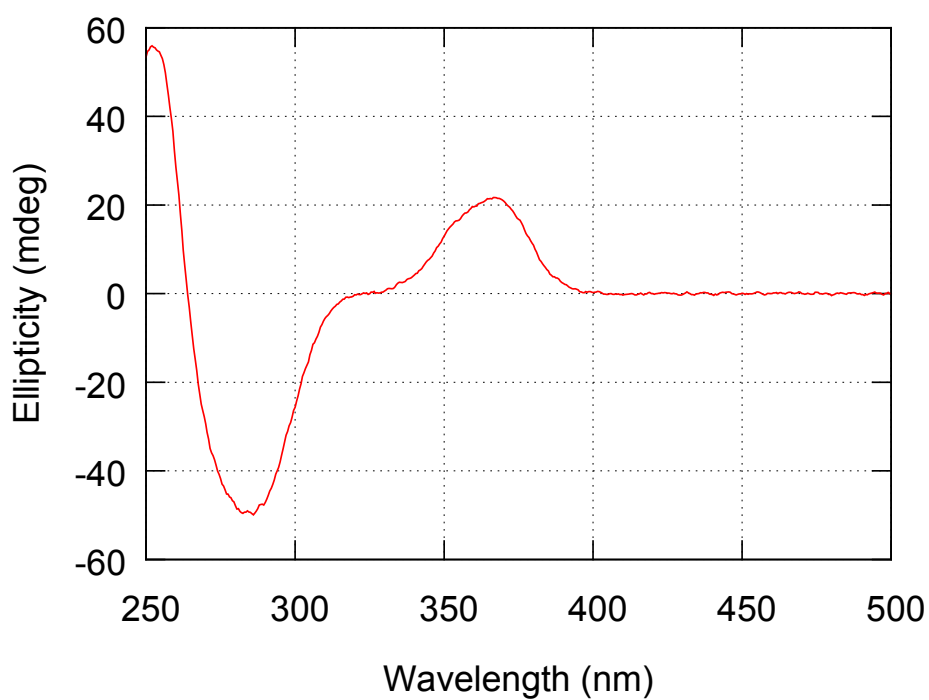


Figure S57. CD spectrum of **2b(40/60)** in *n*-nonane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

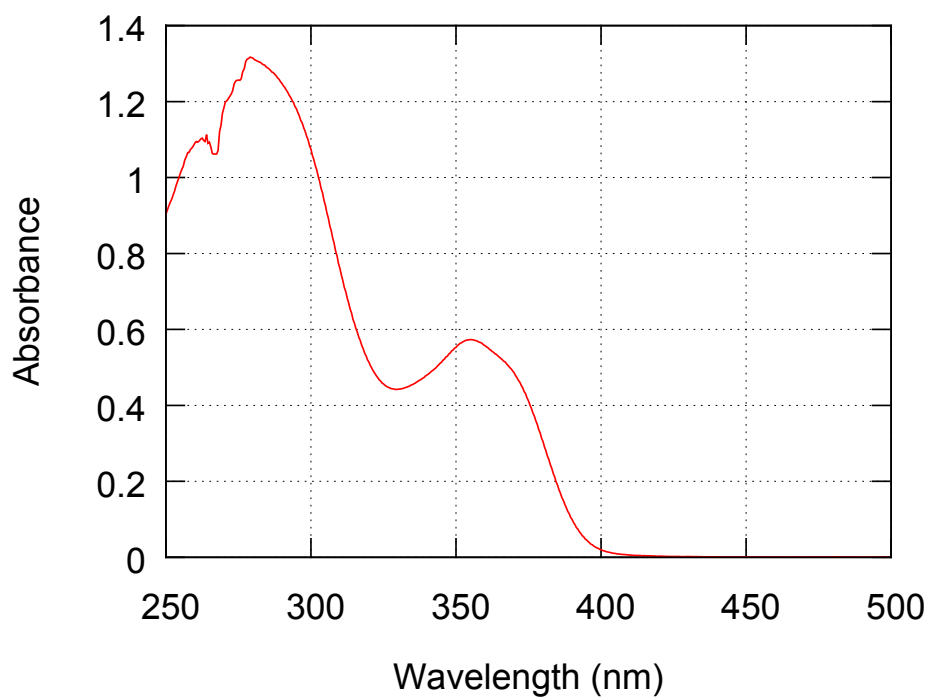


Figure S58. UV-vis absorption spectrum of **2b(40/60)** in *n*-decane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

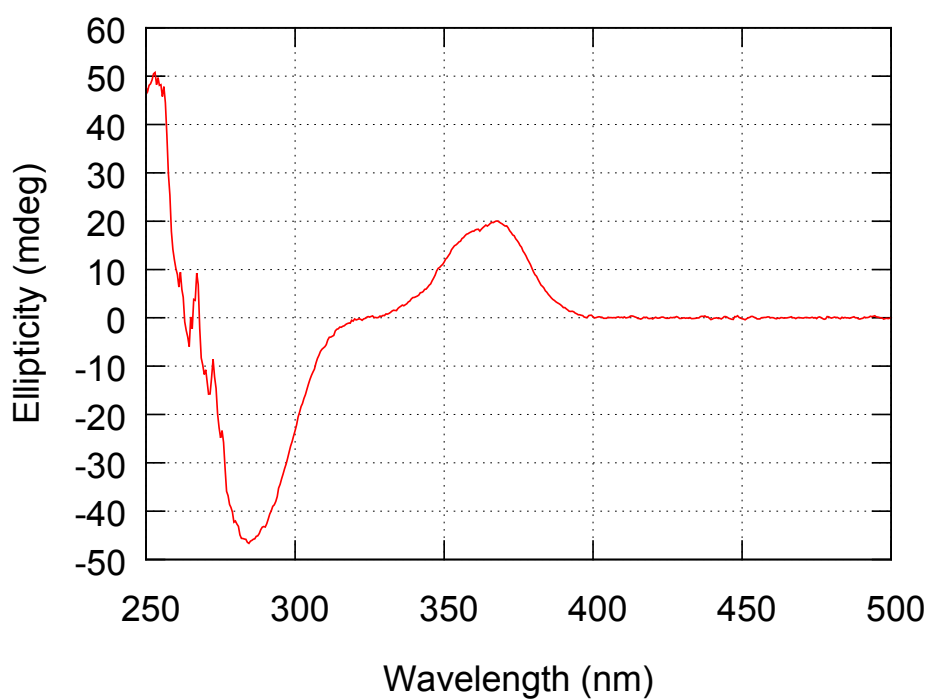


Figure S59. CD spectrum of **2b(40/60)** in *n*-decane ( $1.97 \times 10^{-2}$  g/L, path length = 10 mm).

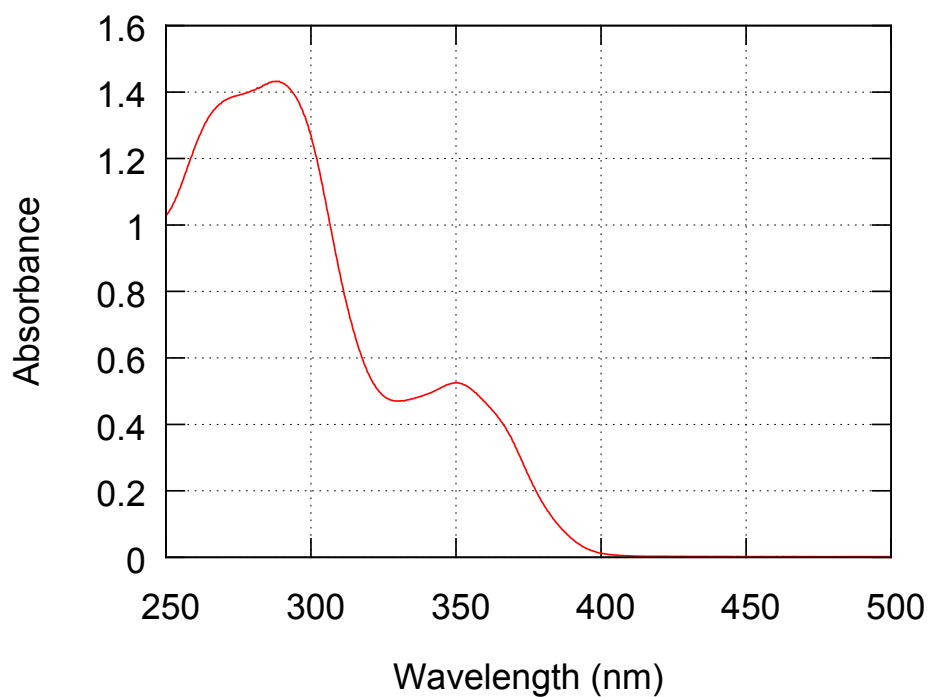


Figure S60. UV-vis absorption spectrum of **3a(40/60)** in *n*-pentane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

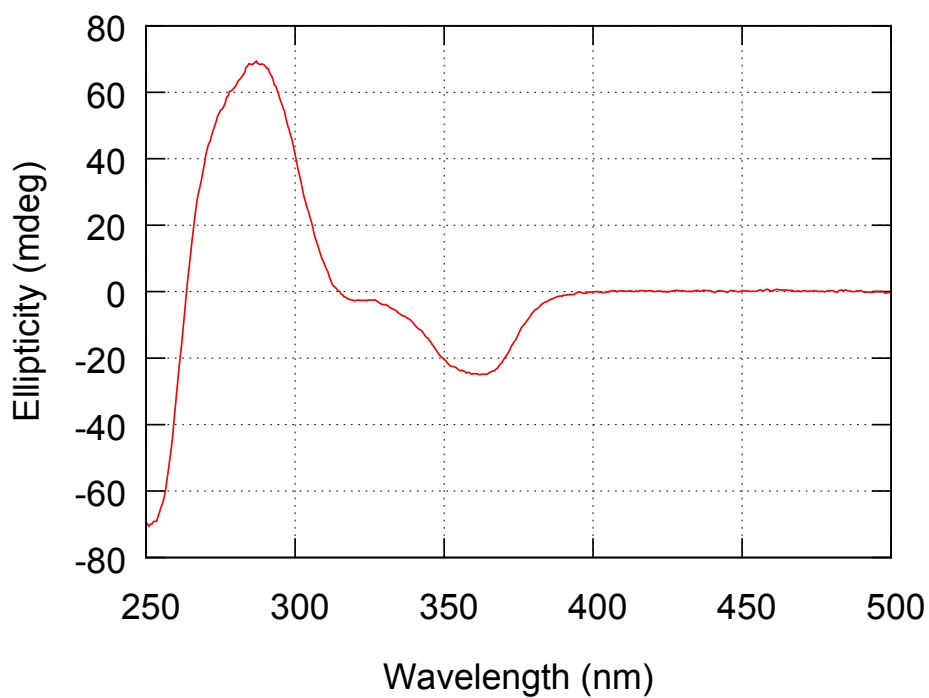


Figure S61. CD spectrum of **3a(40/60)** in *n*-pentane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

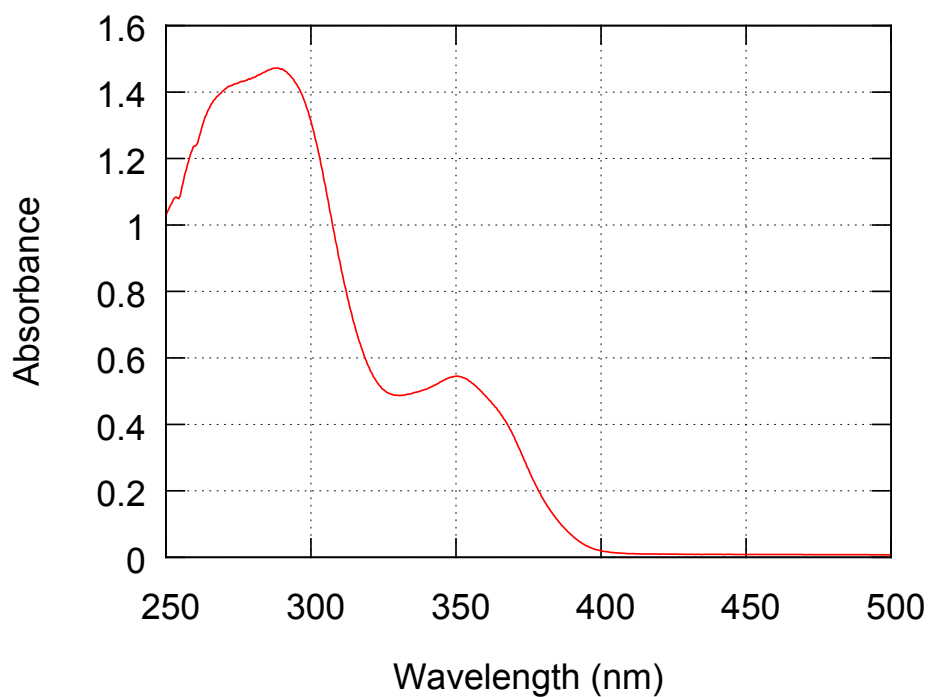


Figure S62. UV-vis absorption spectrum of **3a(40/60)** in *n*-hexane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

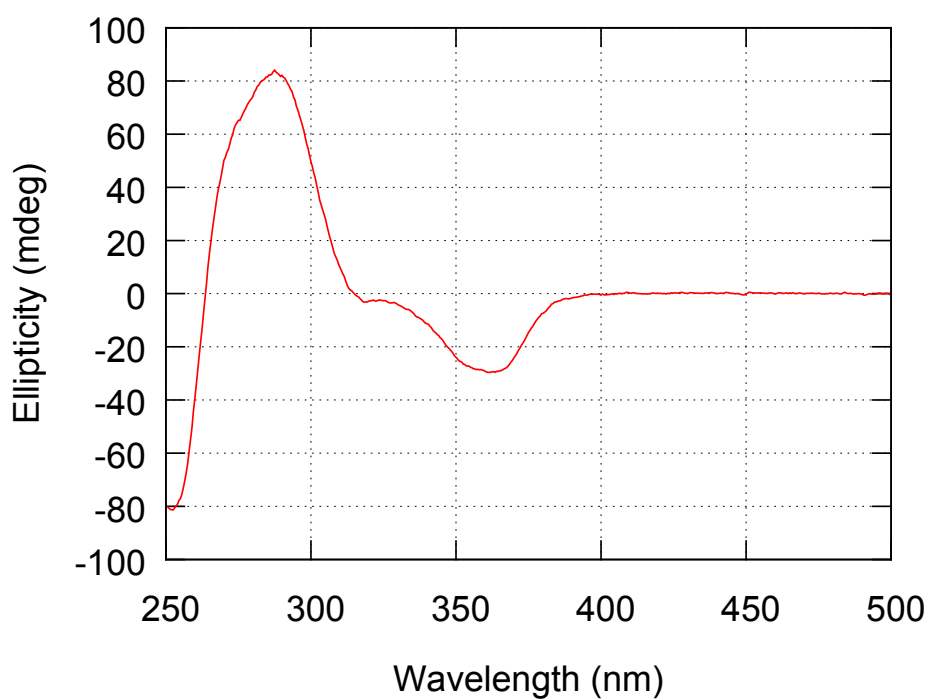


Figure S63. CD spectrum of **3a(40/60)** in *n*-hexane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

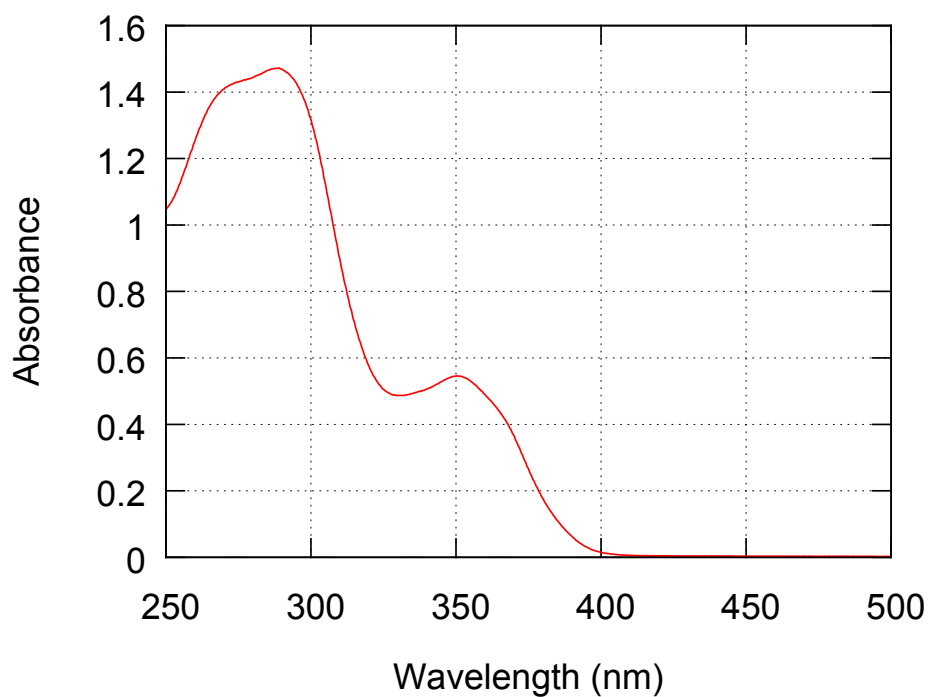


Figure S64. UV-vis absorption spectrum of **3a(40/60)** in *n*-heptane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

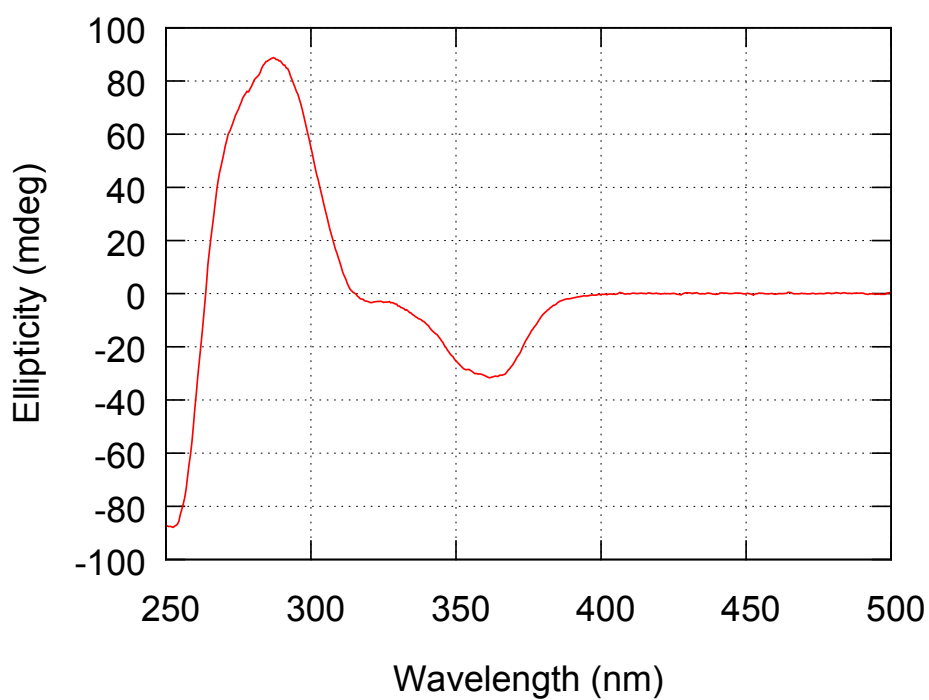


Figure S65. CD spectrum of **3a(40/60)** in *n*-heptane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

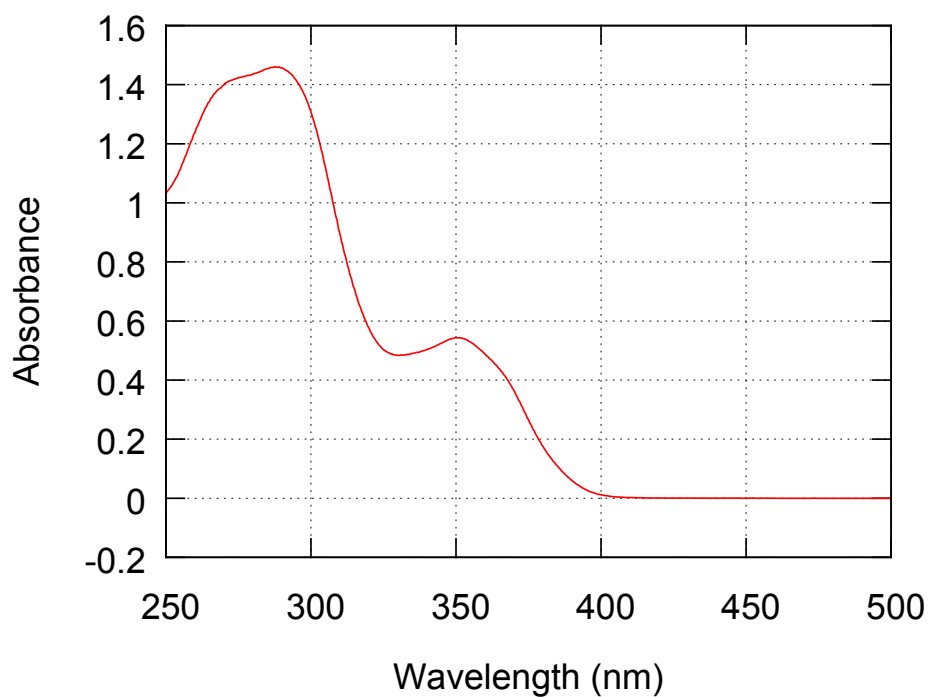


Figure S66. UV-vis absorption spectrum of **3a(40/60)** in *n*-octane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

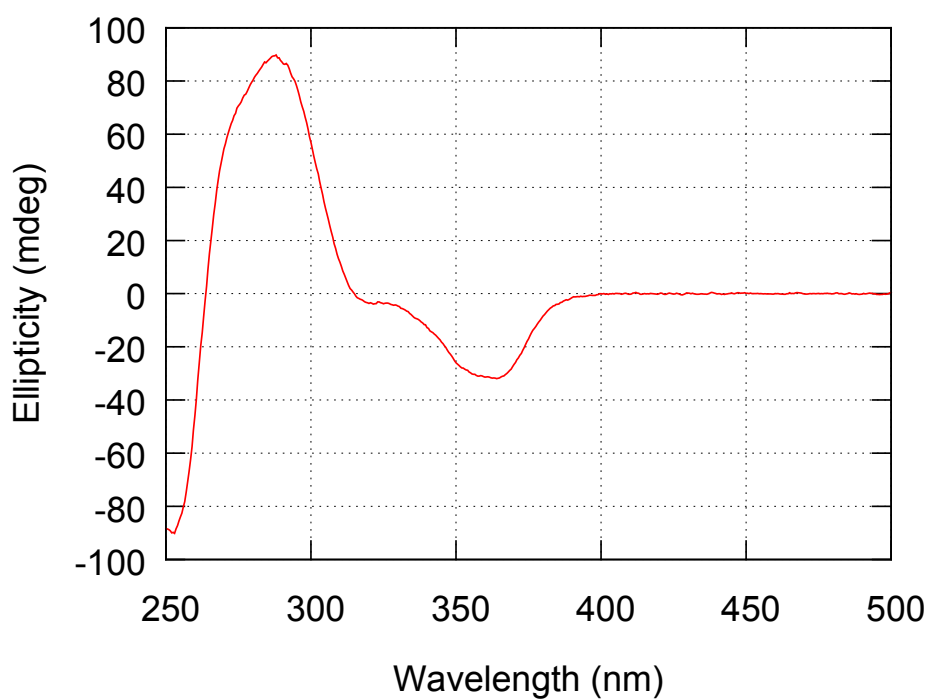


Figure S67. CD spectrum of **3a(40/60)** in *n*-octane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

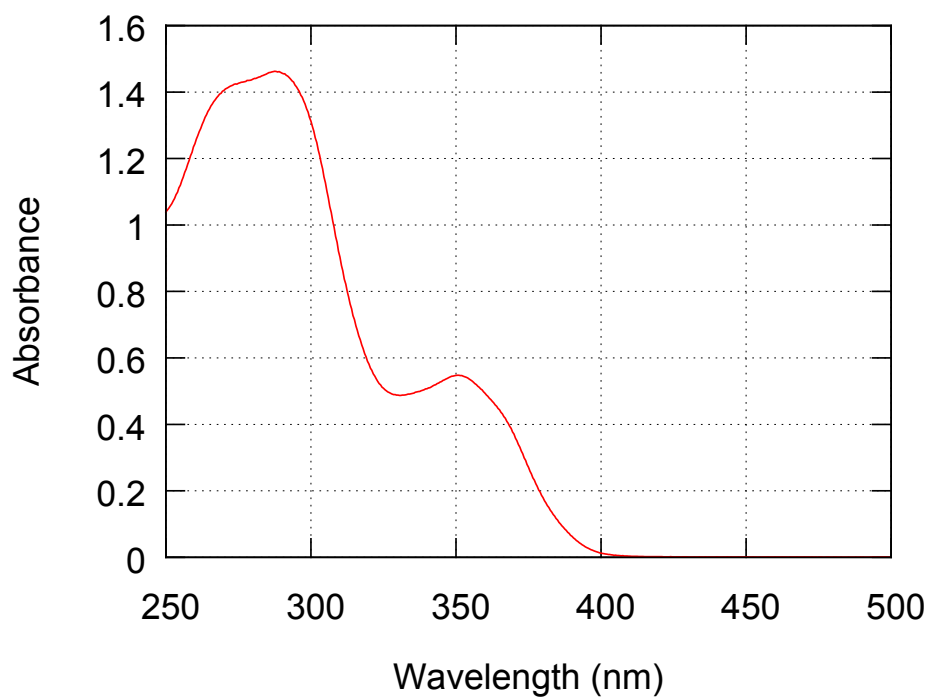


Figure S68. UV-vis absorption spectrum of **3a(40/60)** in *n*-nonane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

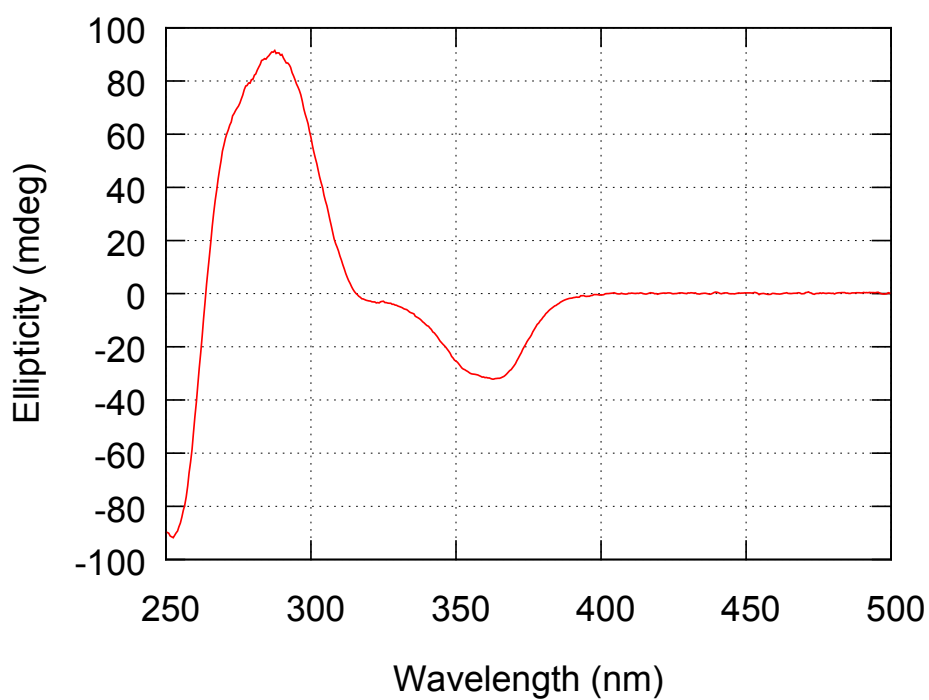


Figure S69. CD spectrum of **3a(40/60)** in *n*-nonane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

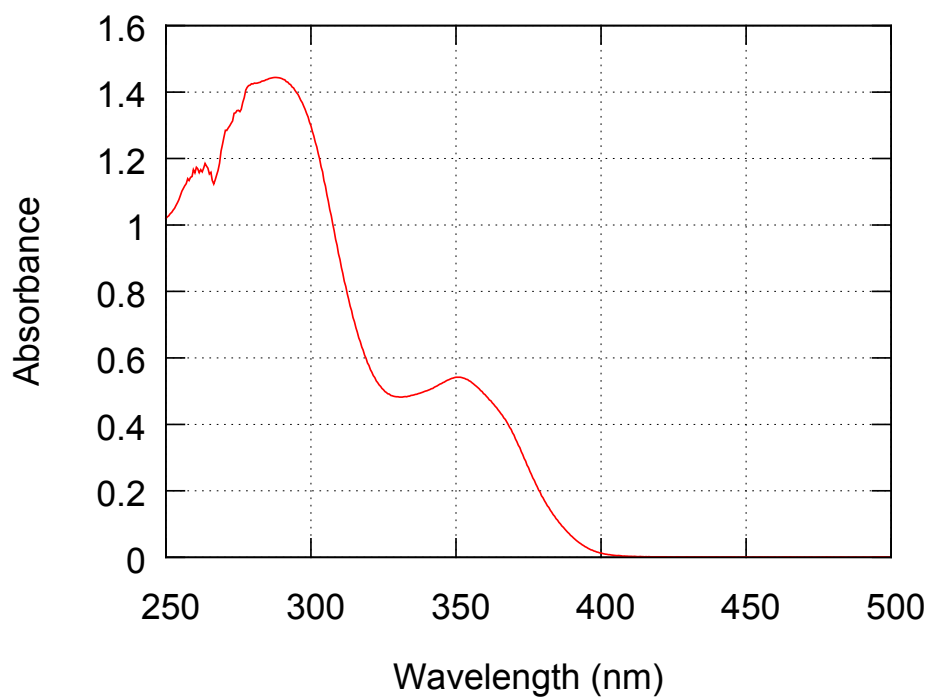


Figure S70. UV-vis absorption spectrum of **3a(40/60)** in *n*-decane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

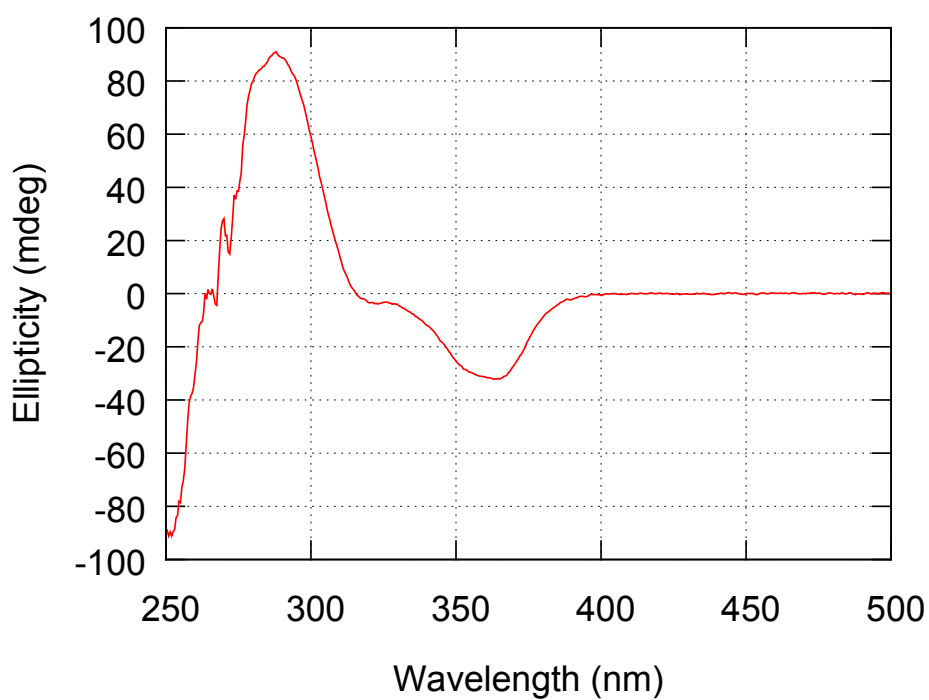


Figure S71. CD spectrum of **3a(40/60)** in *n*-decane ( $2.31 \times 10^{-2}$  g/L, path length = 10 mm).

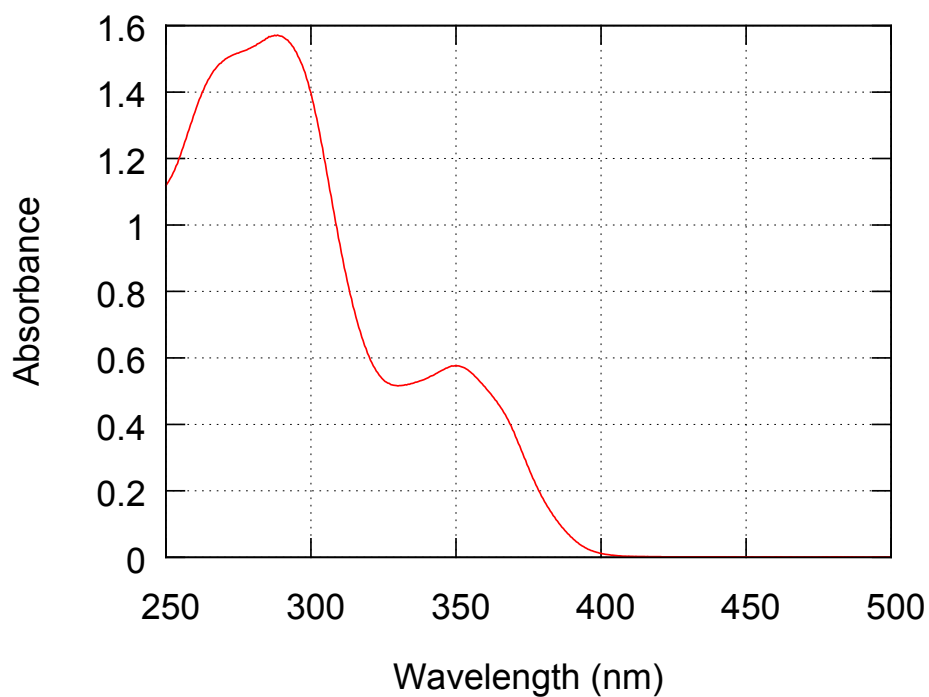


Figure S72. UV-vis absorption spectrum of **3b(40/60)** in *n*-pentane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

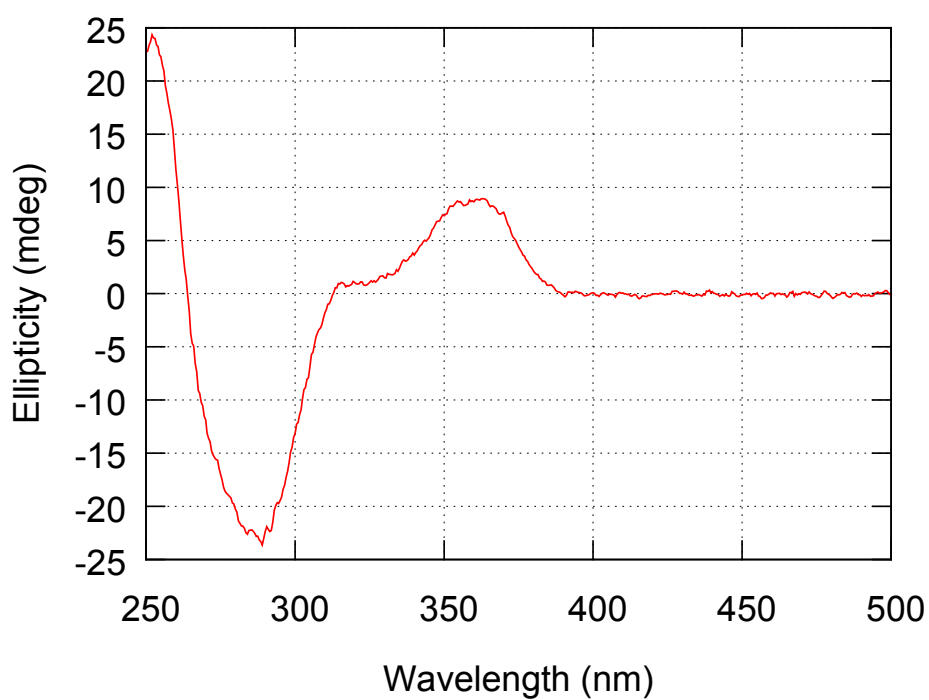


Figure S73. CD spectrum of **3b(40/60)** in *n*-pentane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

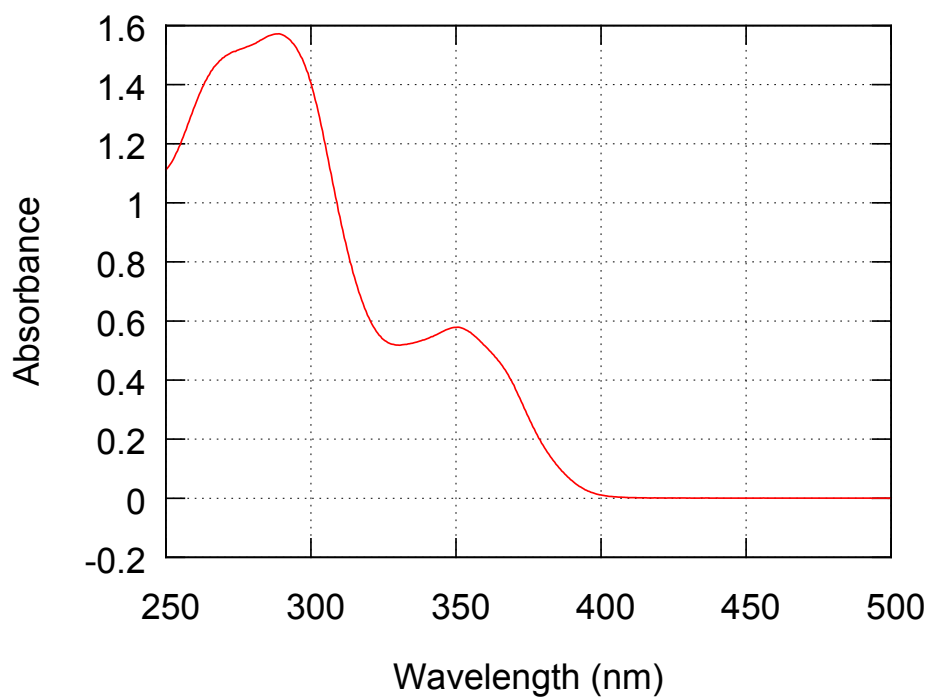


Figure S74. UV-vis absorption spectrum of **3b(40/60)** in *n*-hexane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

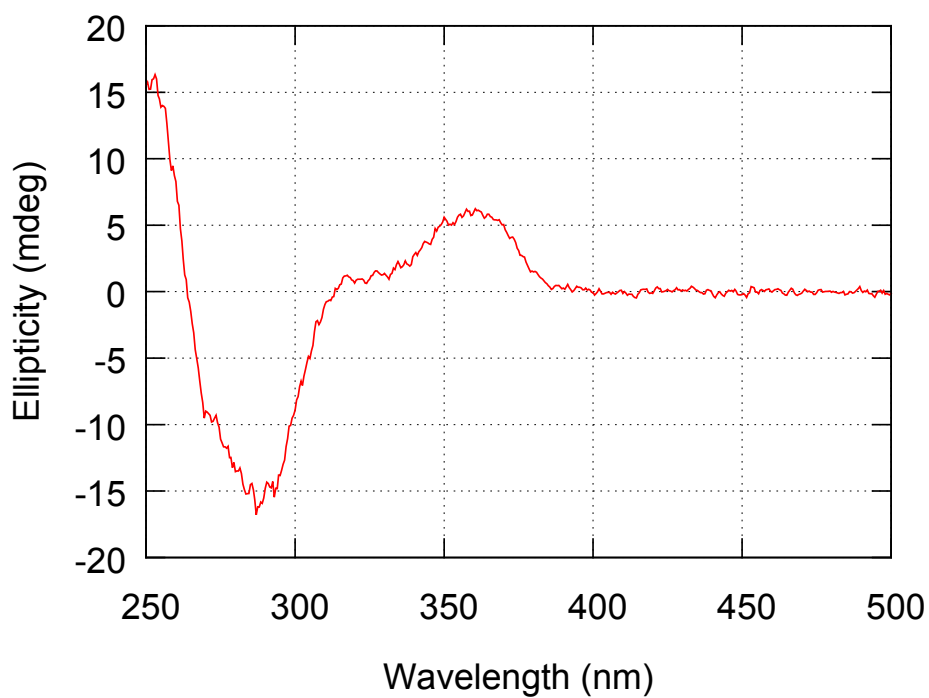


Figure S75. CD spectrum of **3b(40/60)** in *n*-hexane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

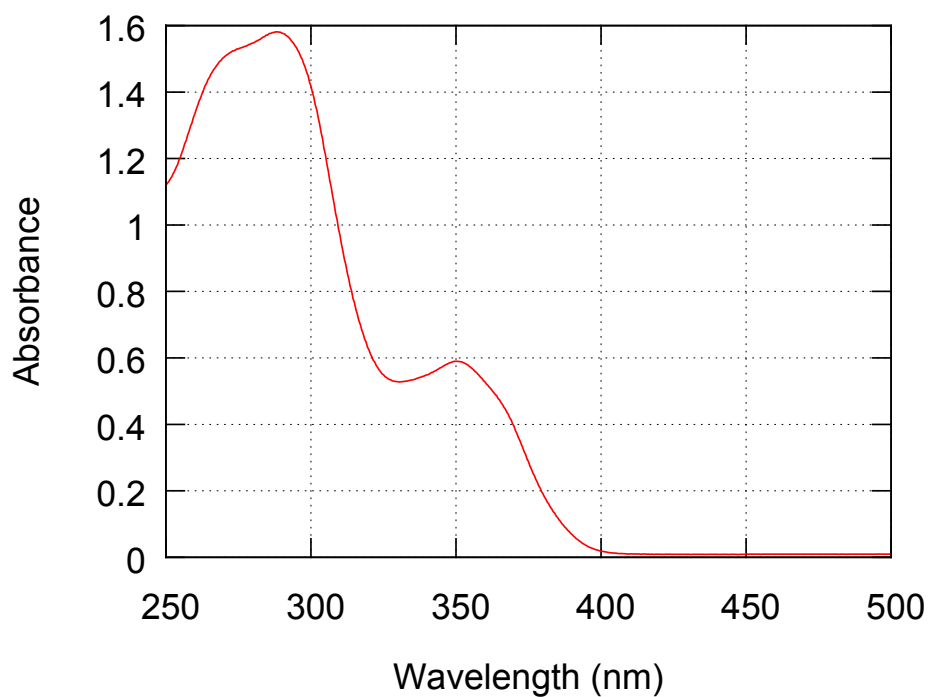


Figure S76. UV-vis absorption spectrum of **3b(40/60)** in *n*-heptane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

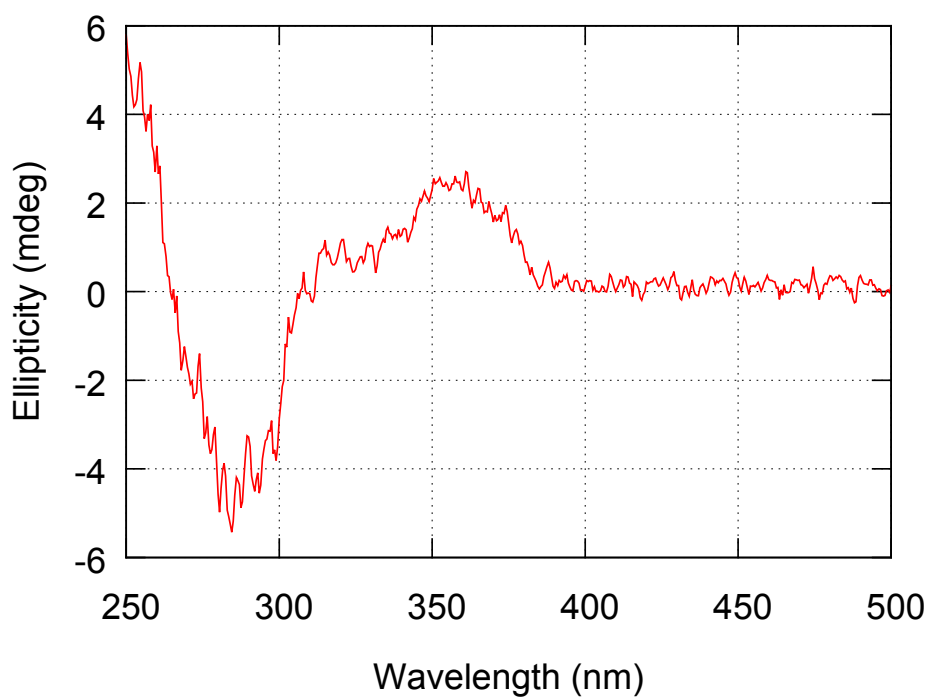


Figure S77. CD spectrum of **3b(40/60)** in *n*-heptane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

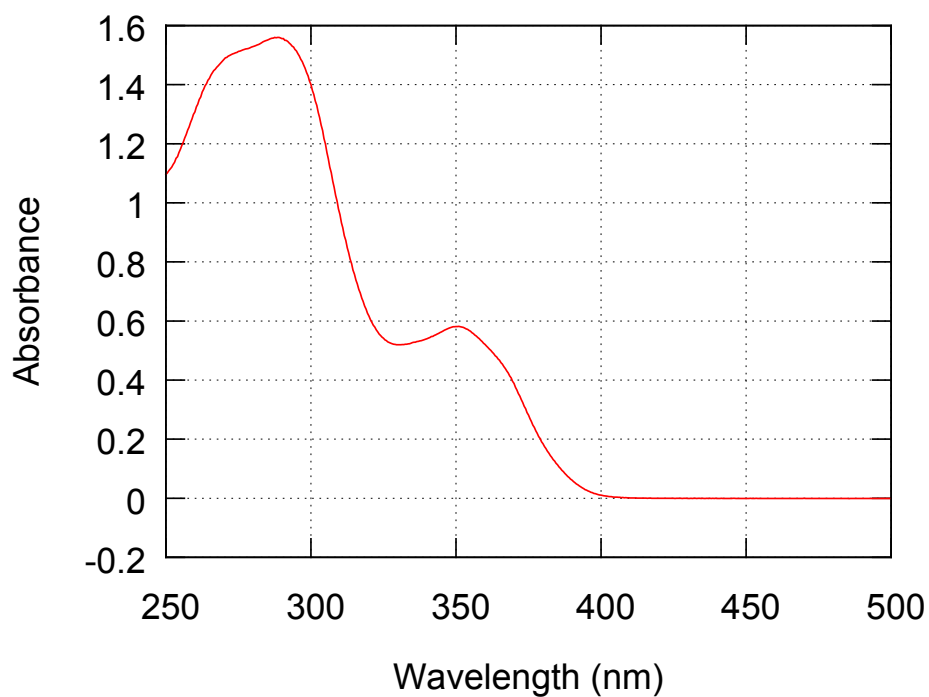


Figure S78. UV-vis absorption spectrum of **3b(40/60)** in *n*-octane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

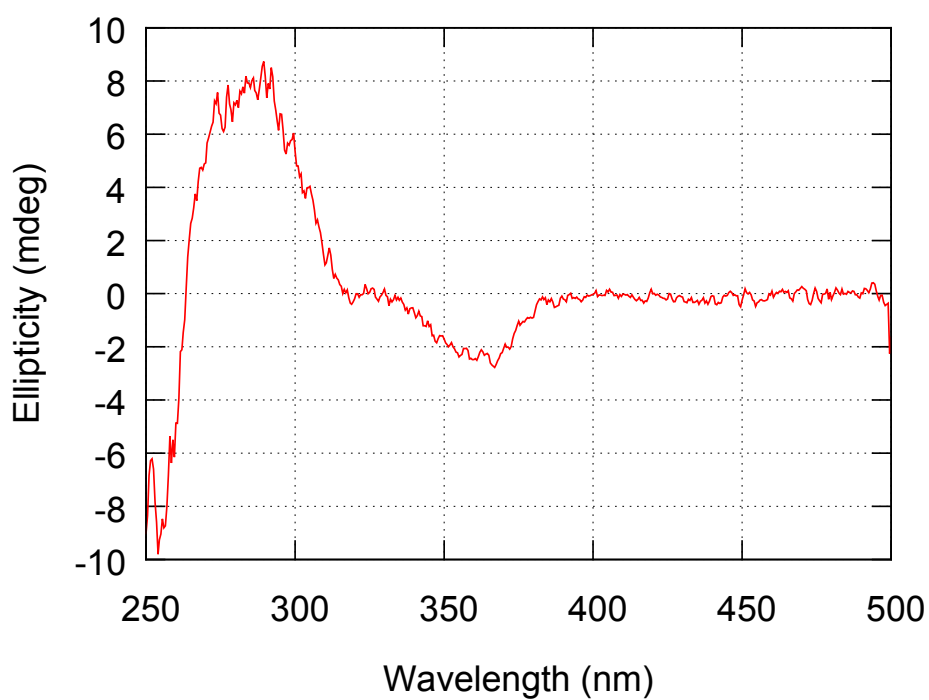


Figure S79. CD spectrum of **3b(40/60)** in *n*-octane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

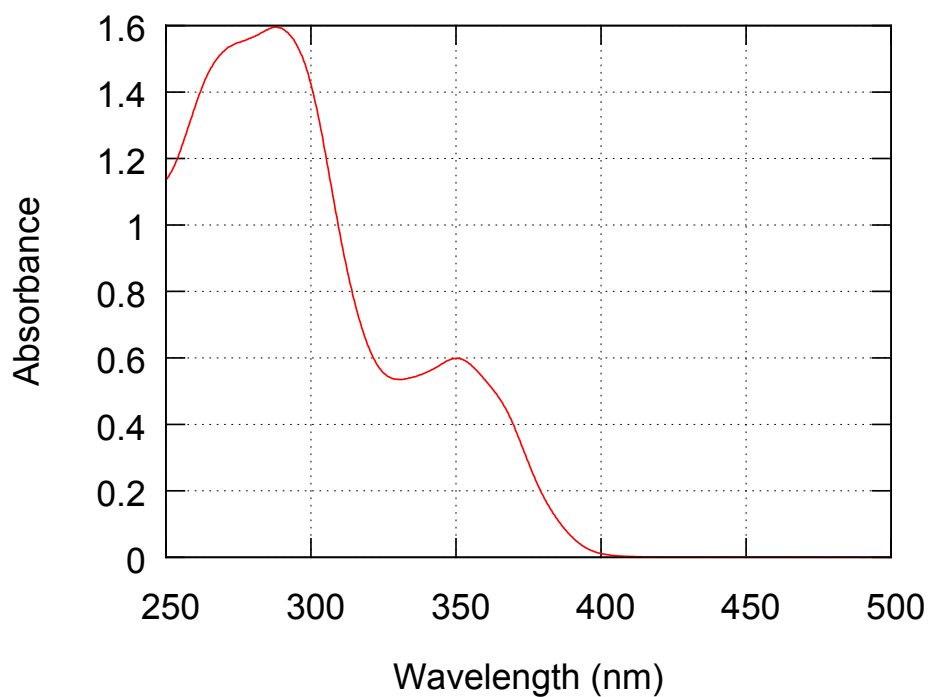


Figure S80. UV-vis absorption spectrum of **3b(40/60)** in *n*-nonane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

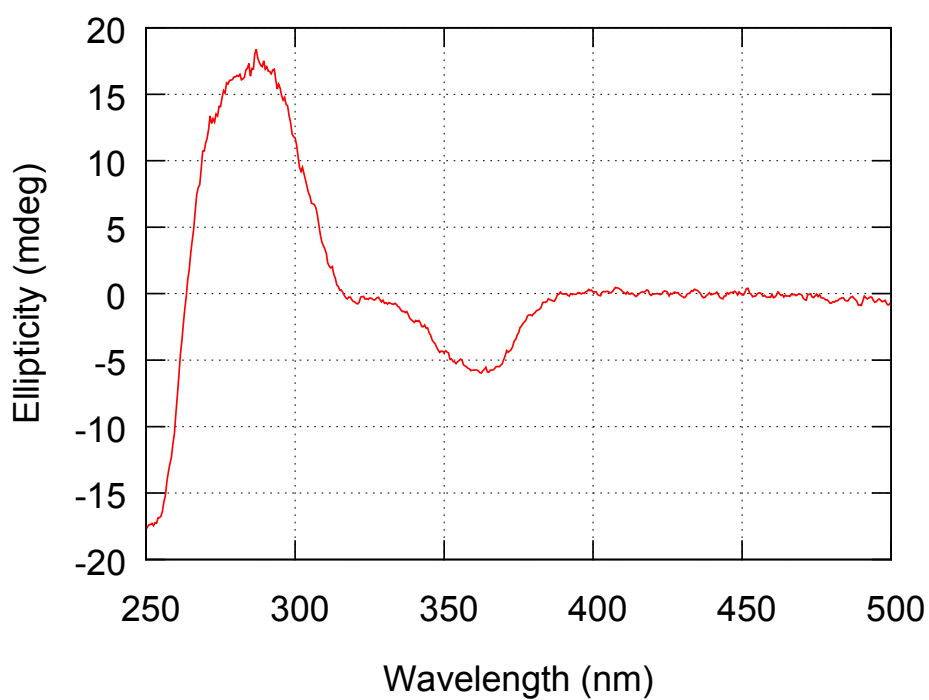


Figure S81. CD spectrum of **3b(40/60)** in *n*-nonane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

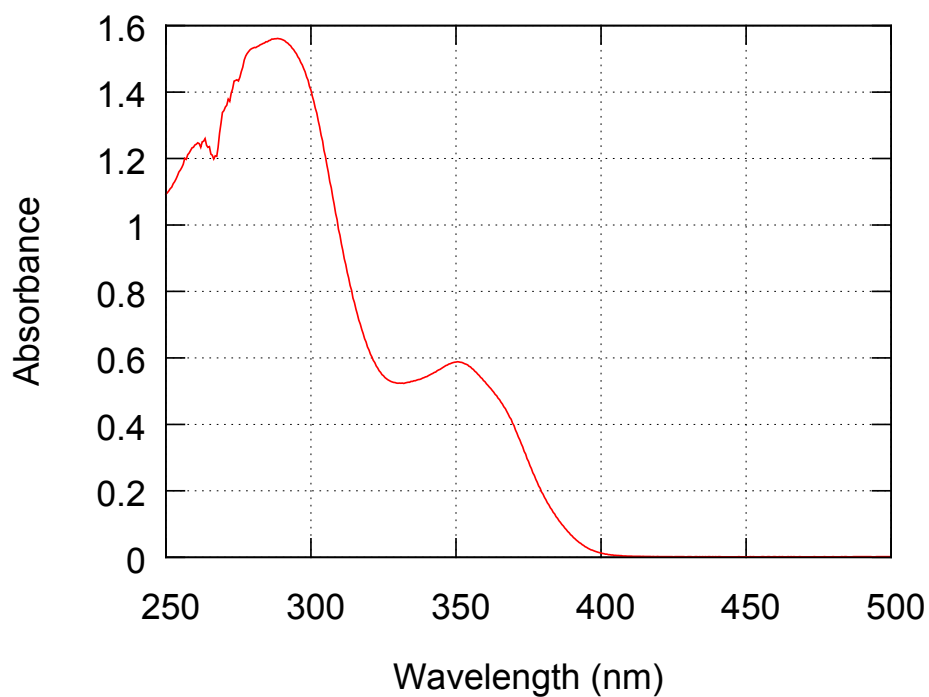


Figure S82. UV-vis absorption spectrum of **3b(40/60)** in *n*-decane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

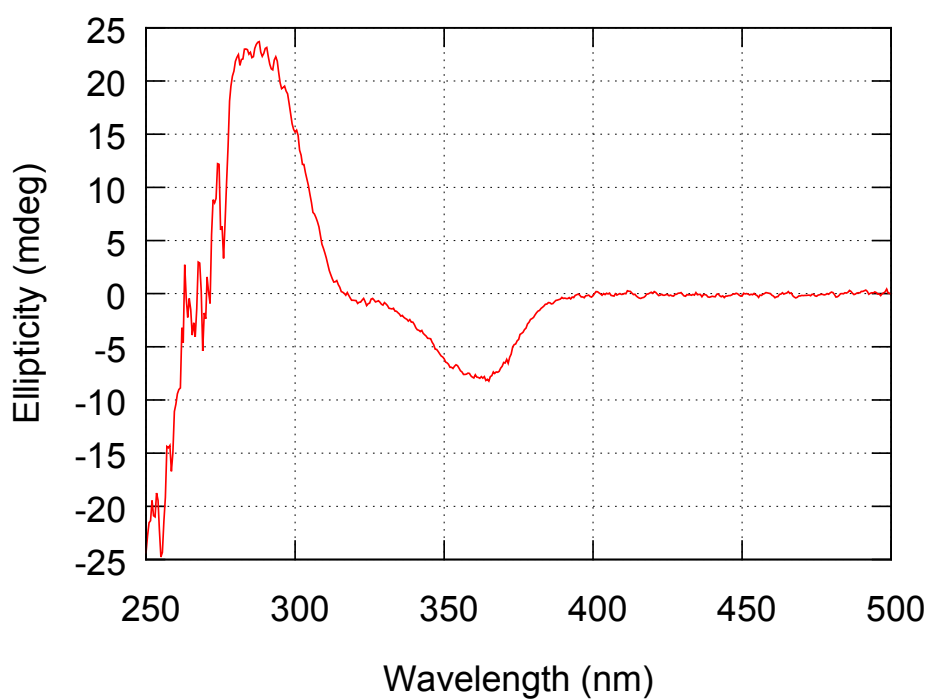


Figure S83. CD spectrum of **3b(40/60)** in *n*-decane ( $2.89 \times 10^{-2}$  g/L, path length = 10 mm).

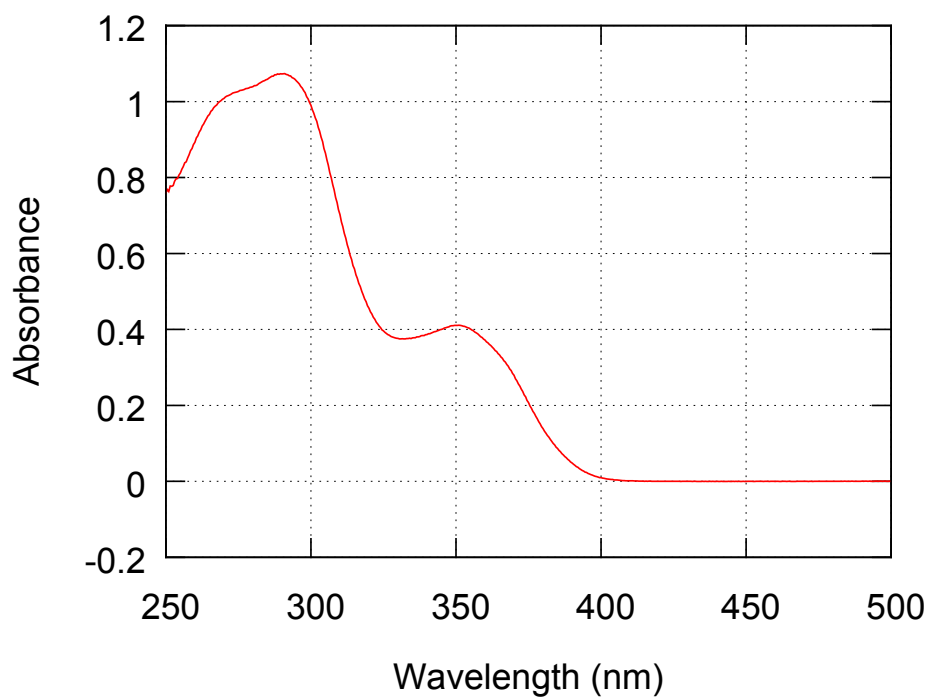


Figure S84. UV-vis absorption spectrum of **3b(40/60)** in *cis*-decaline ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

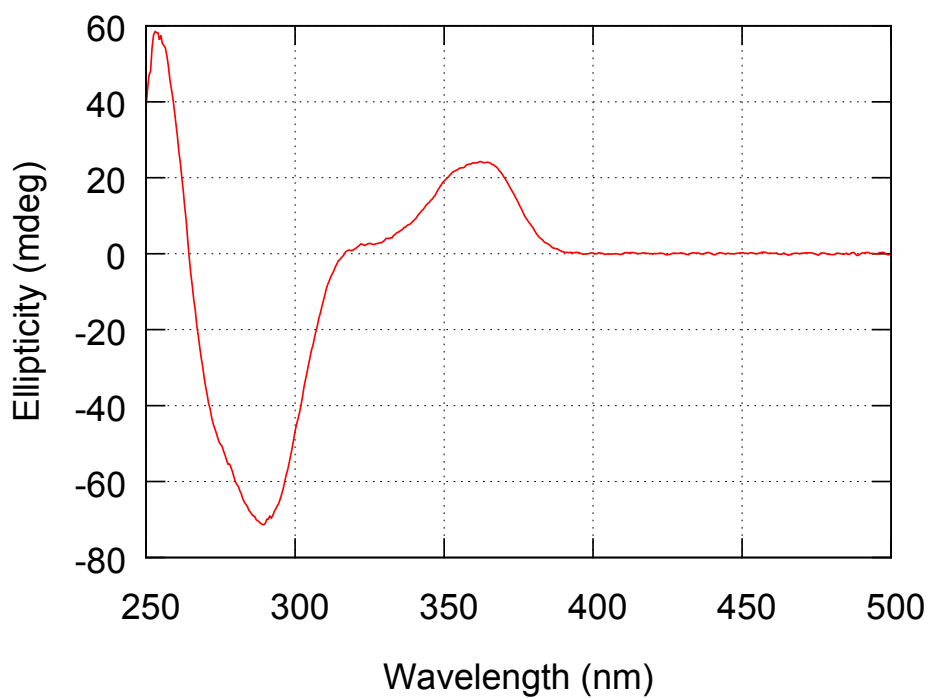


Figure S85. CD spectrum of **3b(40/60)** in *cis*-decaline ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

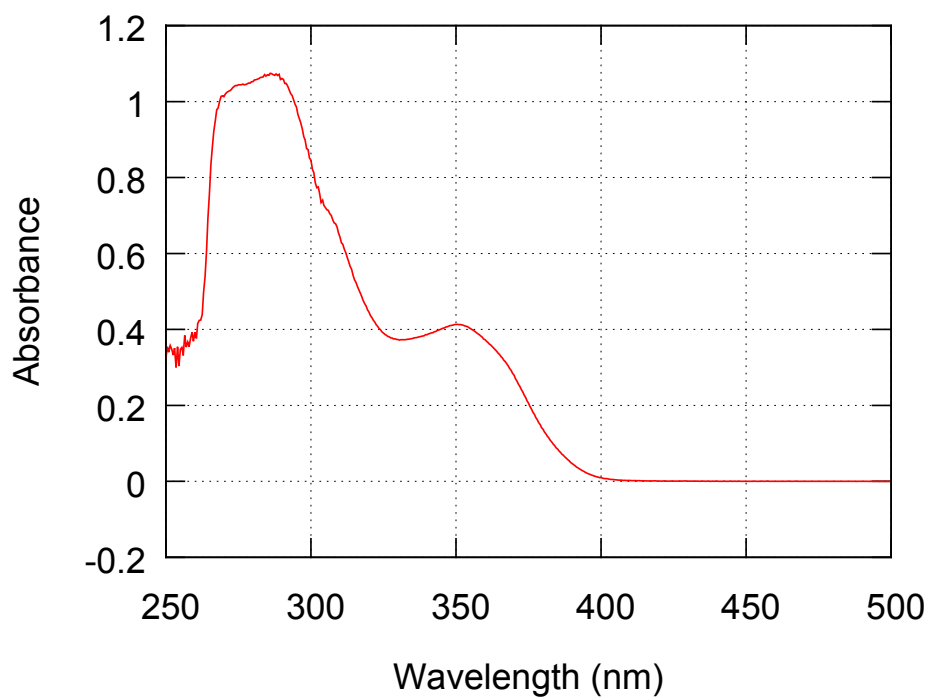


Figure S86. UV-vis absorption spectrum of **3b(40/60)** in *trans*-decaline ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

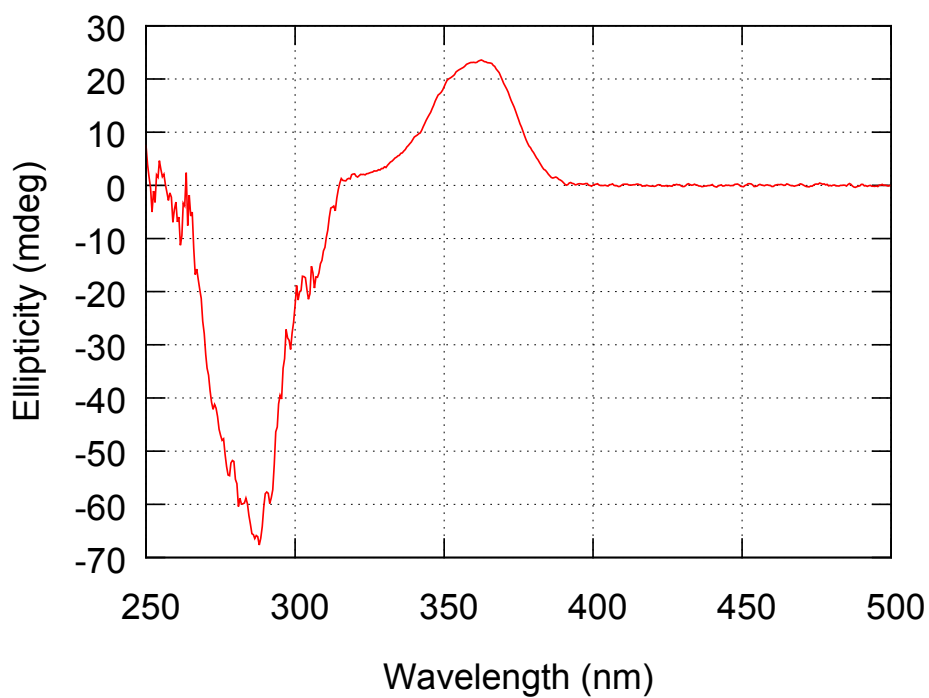


Figure S87. CD spectrum of **3b(40/60)** in *trans*-decaline ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

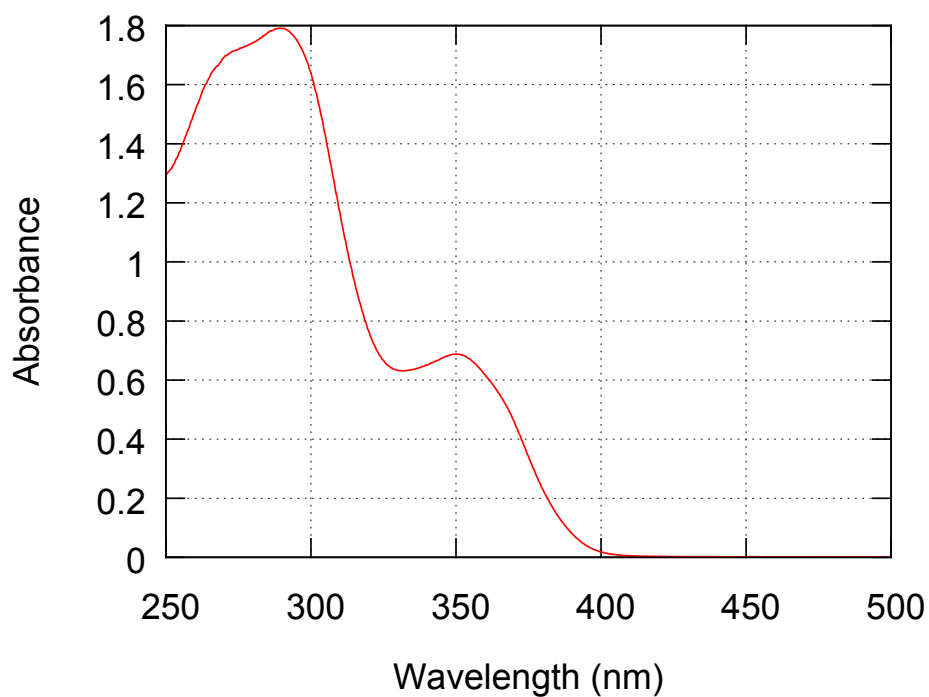


Figure S88. UV-vis absorption spectrum of **3b(40/60)** in cyclooctane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

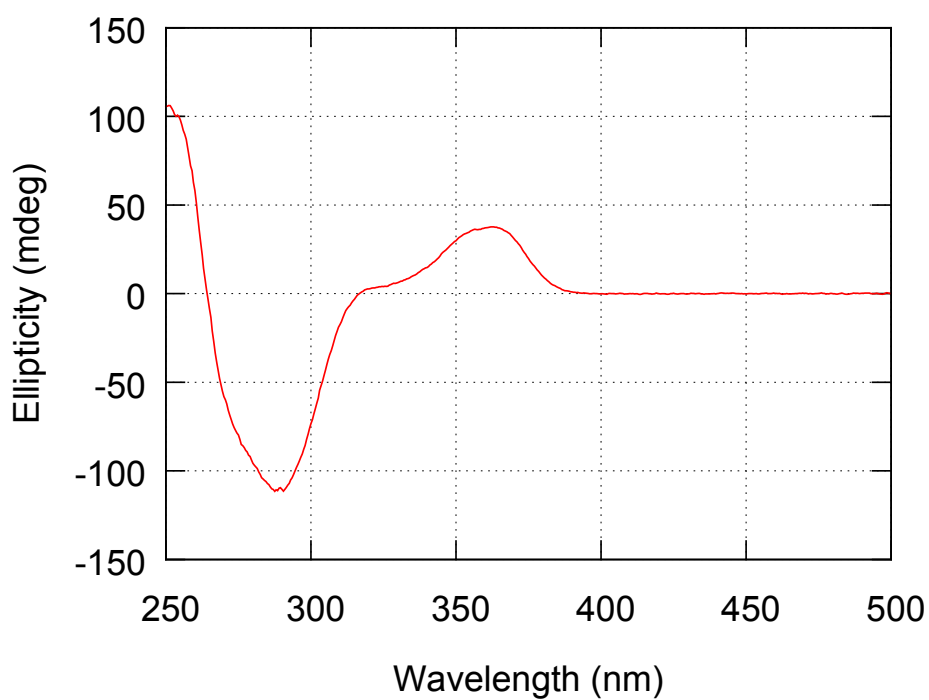


Figure S89. CD spectrum of **3b(40/60)** in cyclooctane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

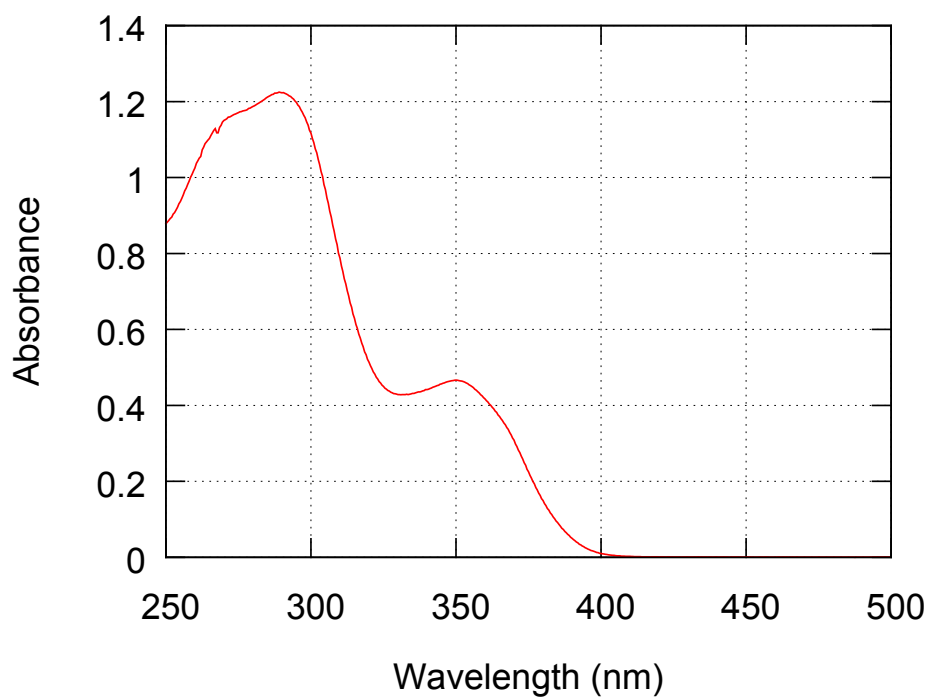


Figure S90. UV-vis absorption spectrum of **3b(40/60)** in cycloheptane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

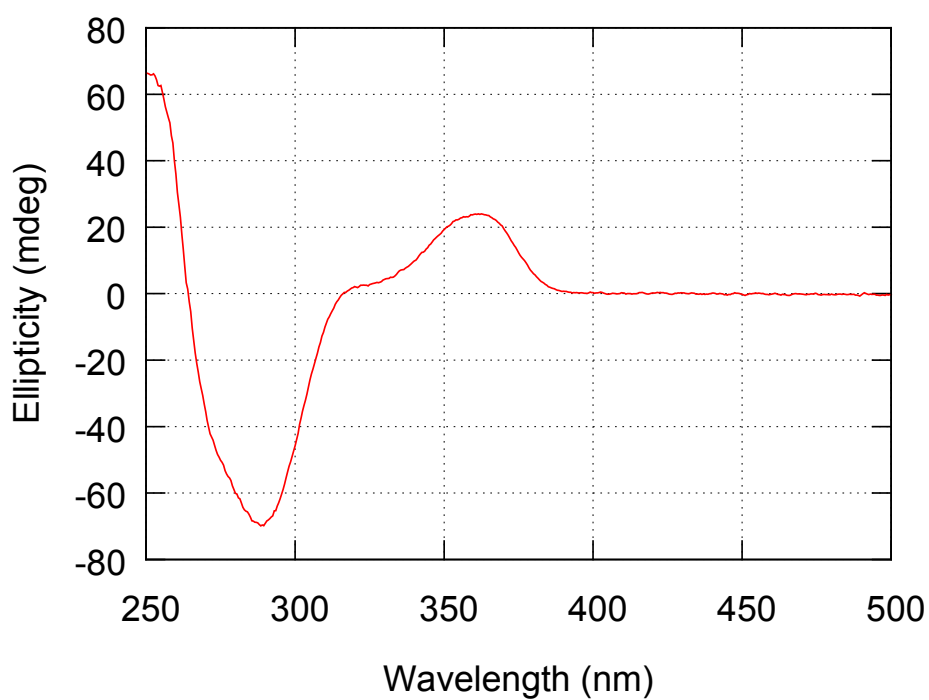


Figure S91. CD spectrum of **3b(40/60)** in cycloheptane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

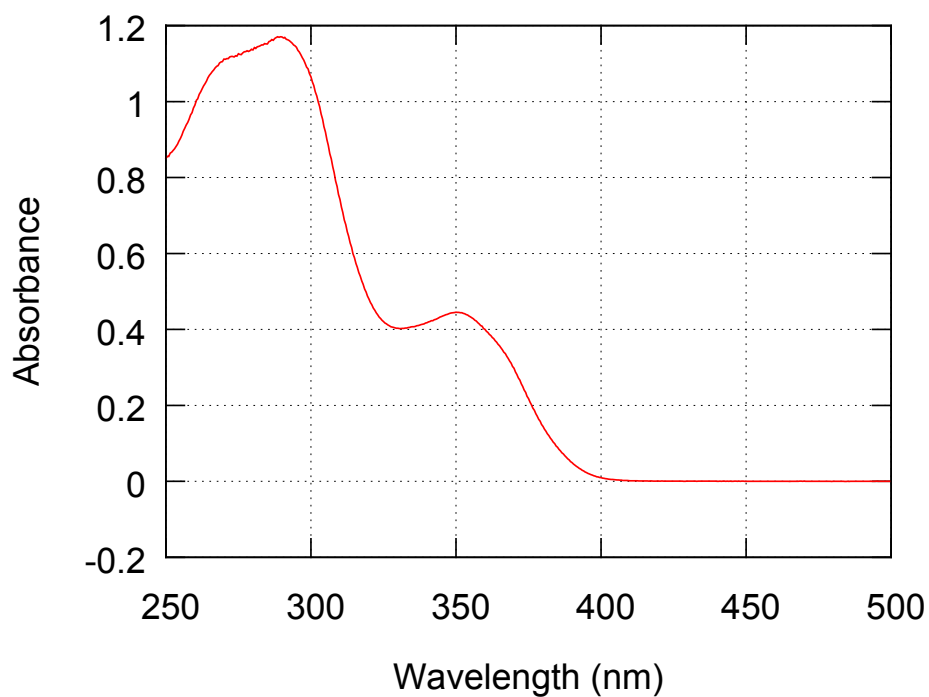


Figure S92. UV-vis absorption spectrum of **3b(40/60)** in isopropylcyclohexane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

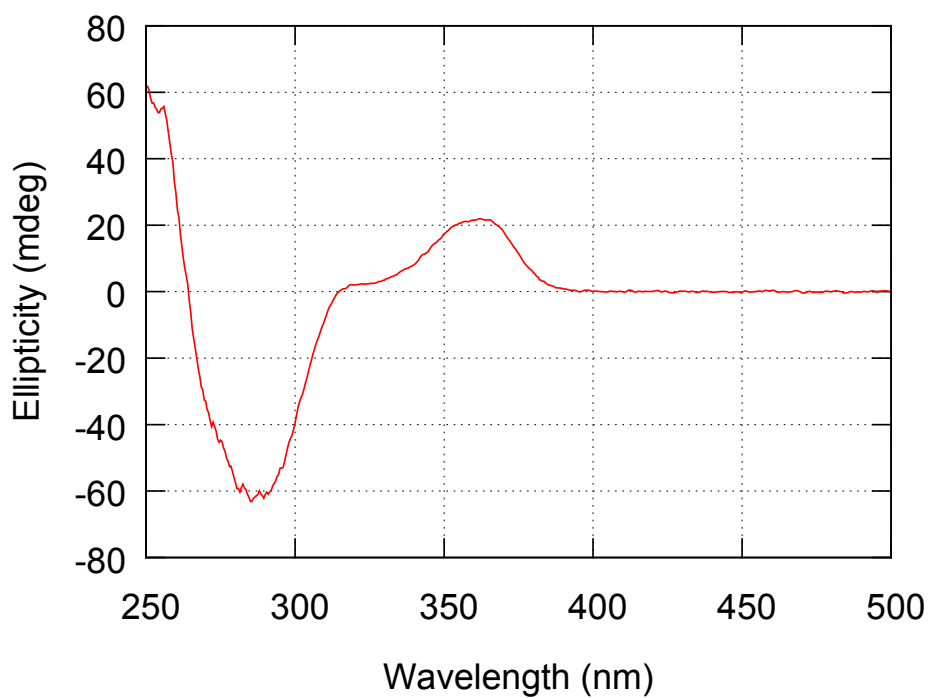


Figure S93. CD spectrum of **3b(40/60)** in isopropylcyclohexane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

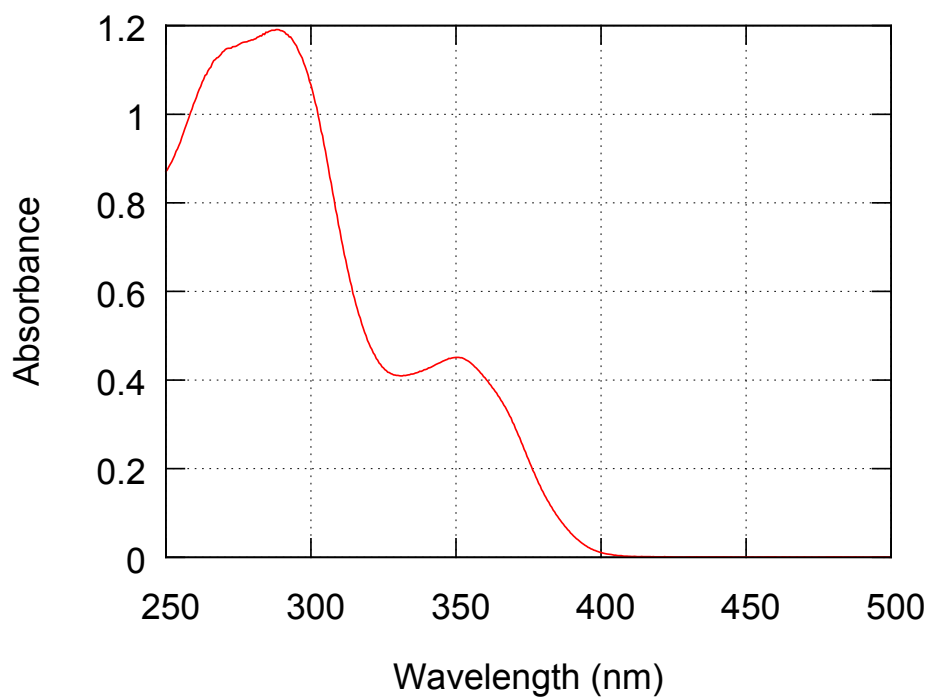


Figure S94. UV-vis absorption spectrum of **3b(40/60)** in 2,3,4-trimethylpentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

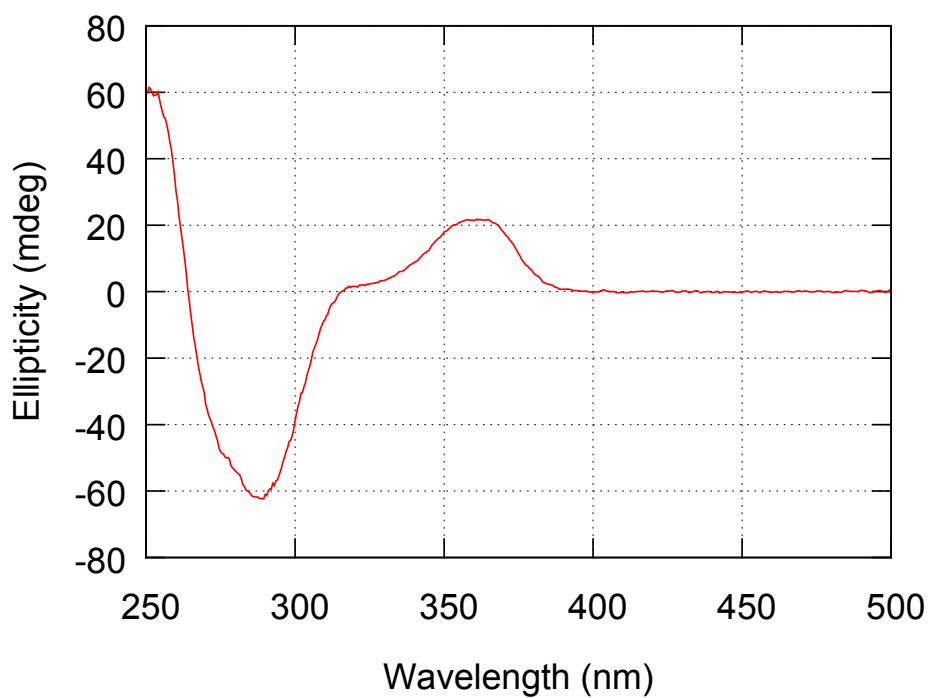


Figure S95. CD spectrum of **3b(40/60)** in 2,3,4-trimethylpentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

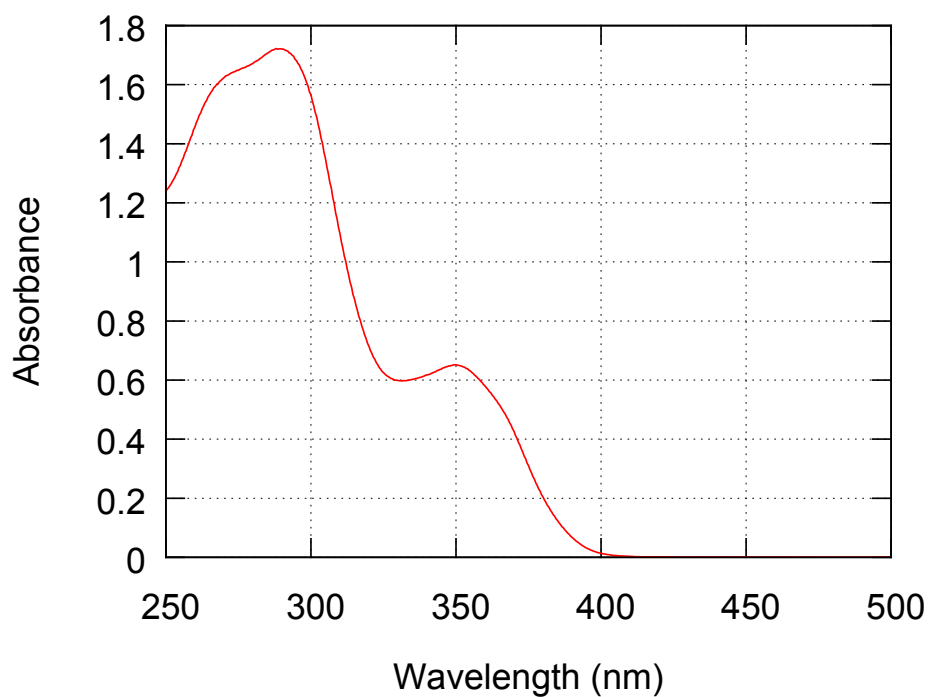


Figure S96. UV-vis absorption spectrum of **3b(40/60)** in cyclohexane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

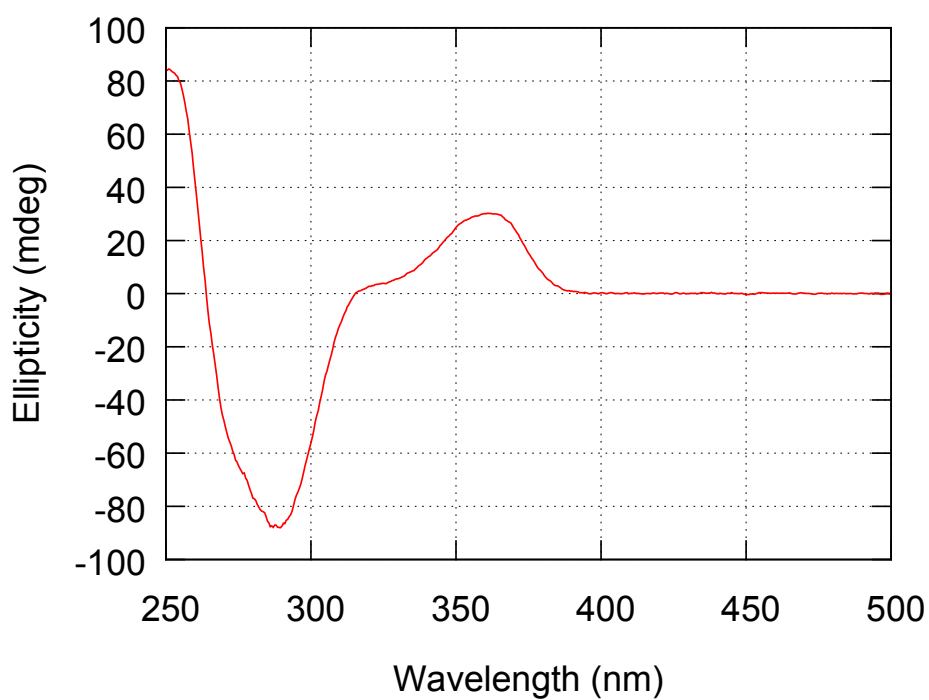


Figure S97. CD spectrum of **3b(40/60)** in cyclohexane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

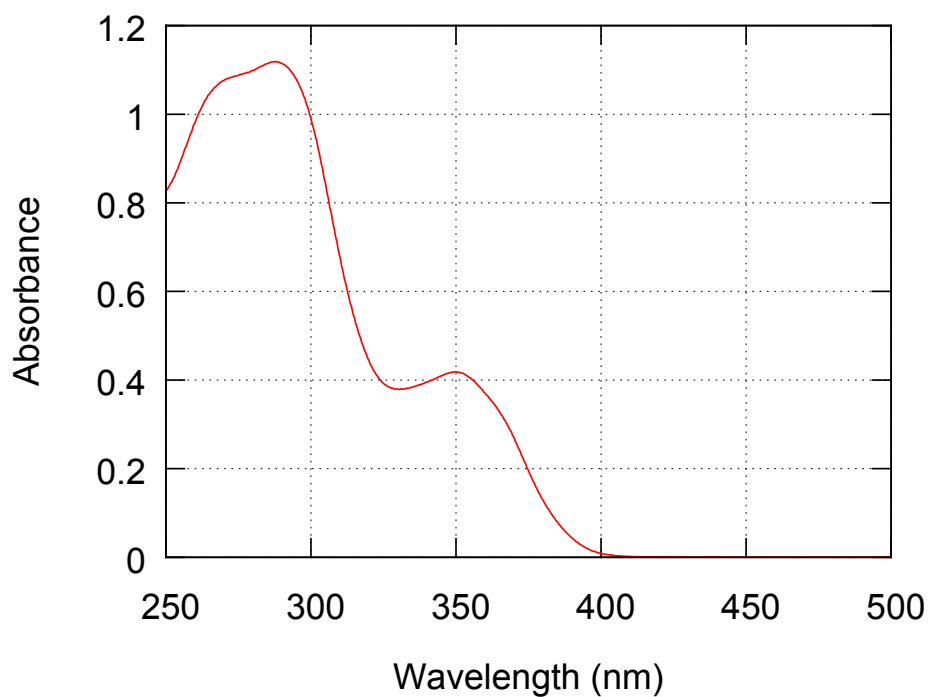


Figure S98. UV-vis absorption spectrum of **3b(40/60)** in 2,3-dimethylbutane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

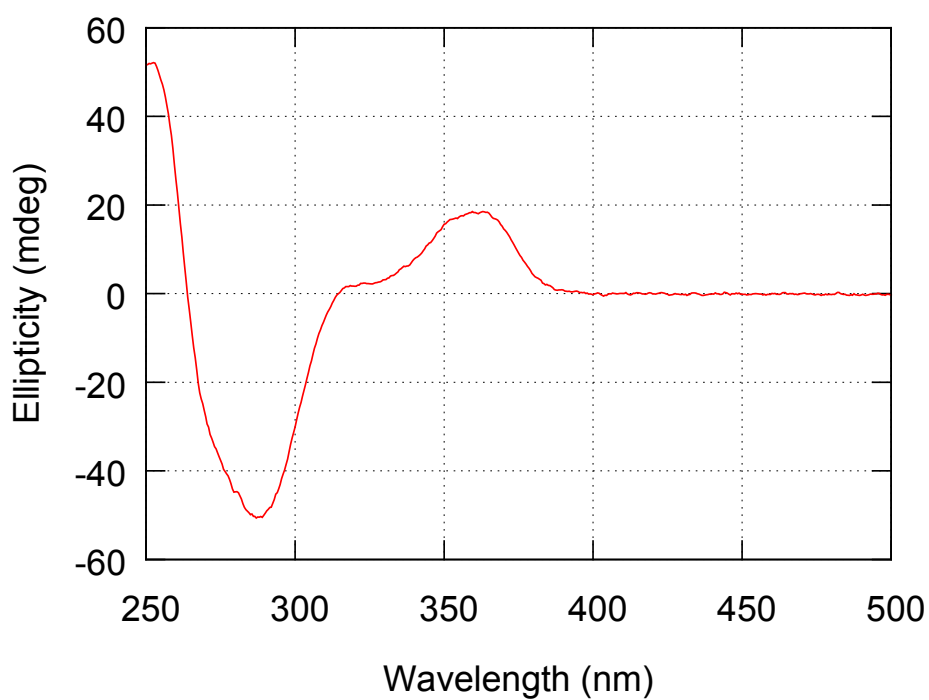


Figure S99. CD spectrum of **3b(40/60)** in 2,3-dimethylbutane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

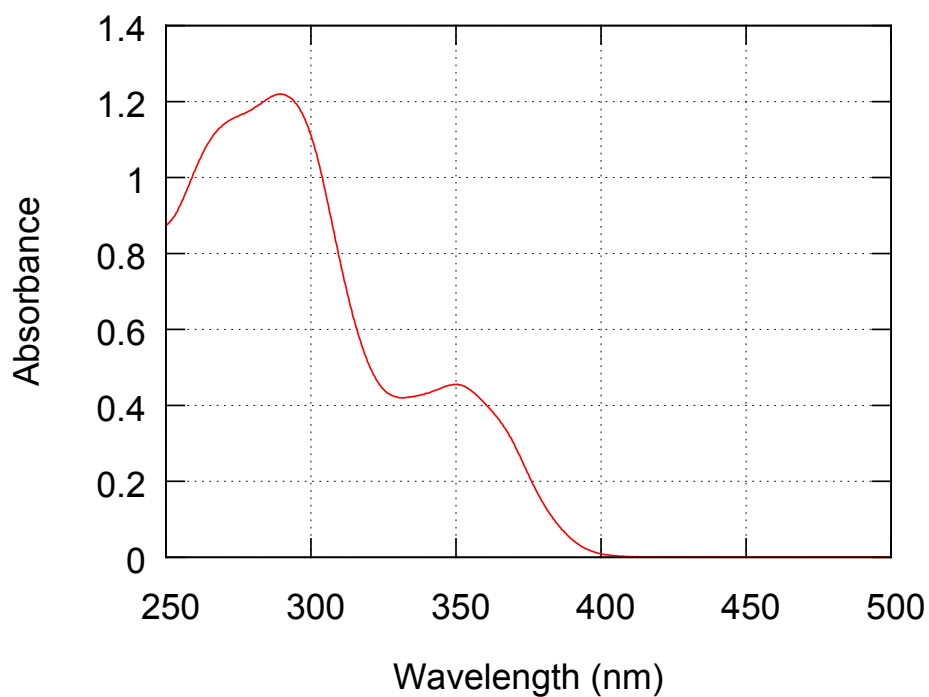


Figure S100. UV-vis absorption spectrum of **3b(40/60)** in cyclopentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

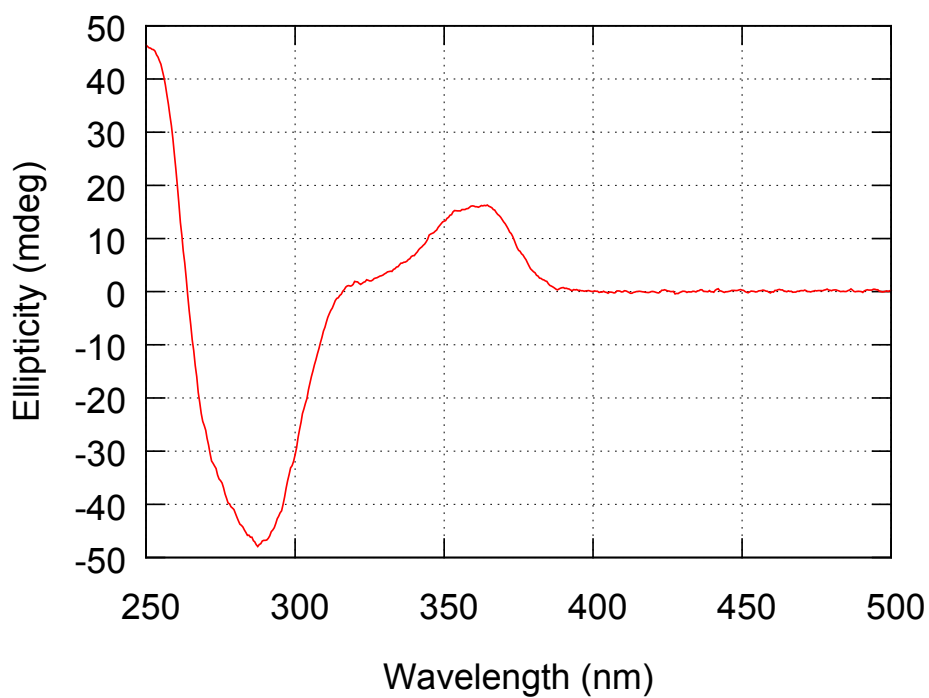


Figure S101. CD spectrum of **3b(40/60)** in cyclopentane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

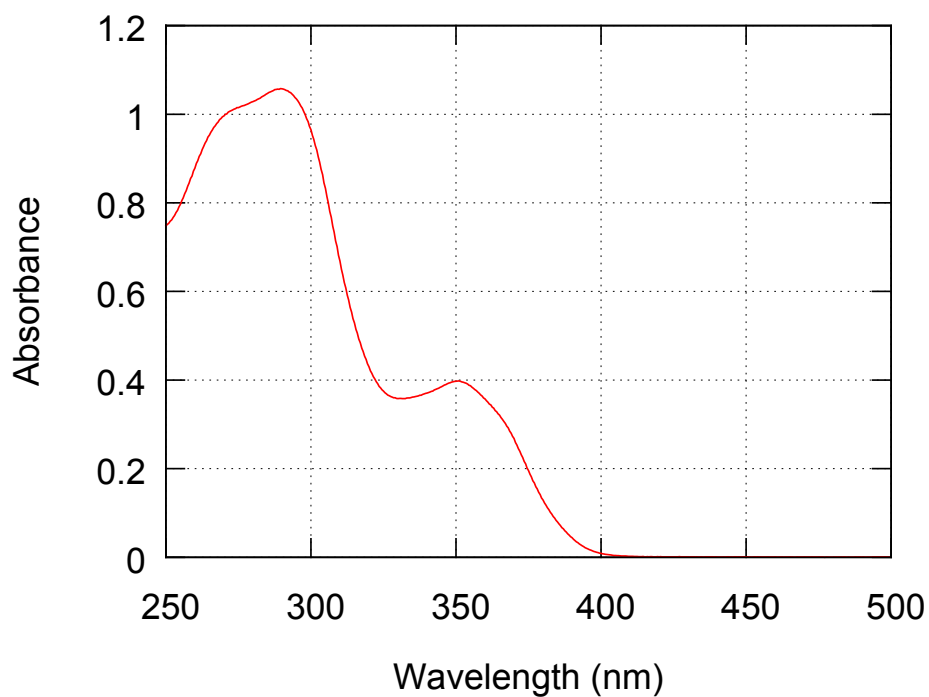


Figure S102. UV-vis absorption spectrum of **3b(40/60)** in propylcyclohexane ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

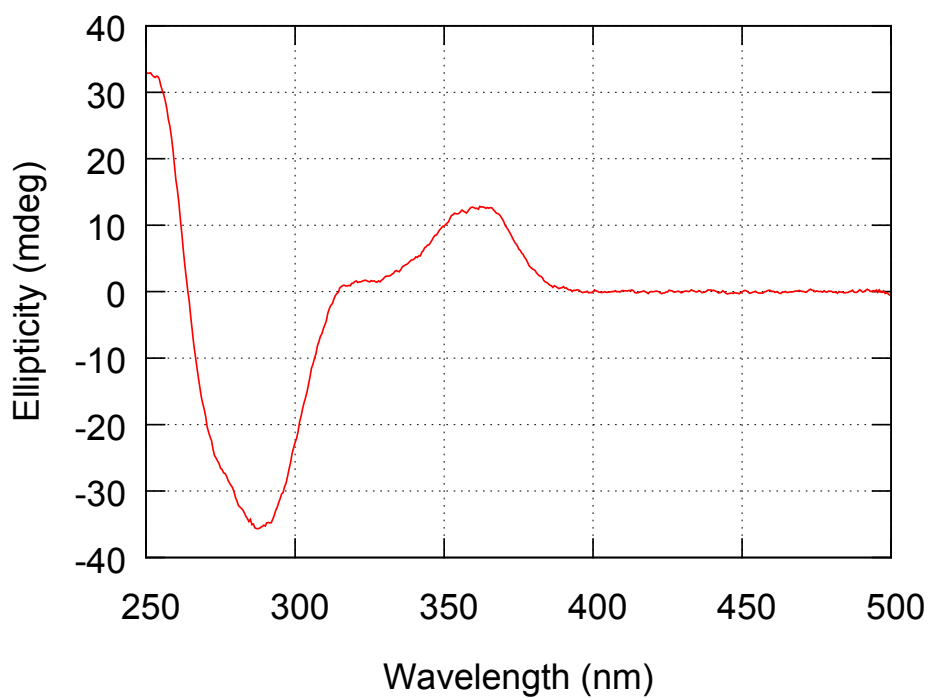


Figure S103. CD spectrum of **3b(40/60)** in propylcyclohexane ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

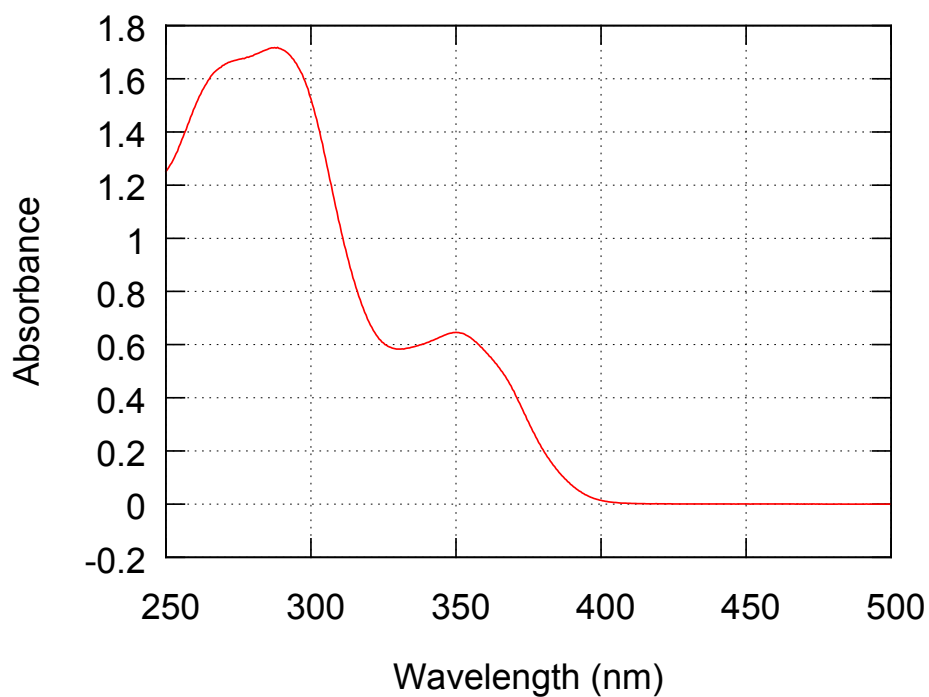


Figure S104. UV-vis absorption spectrum of **3b(40/60)** in 2,2,4-trimethylpentane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

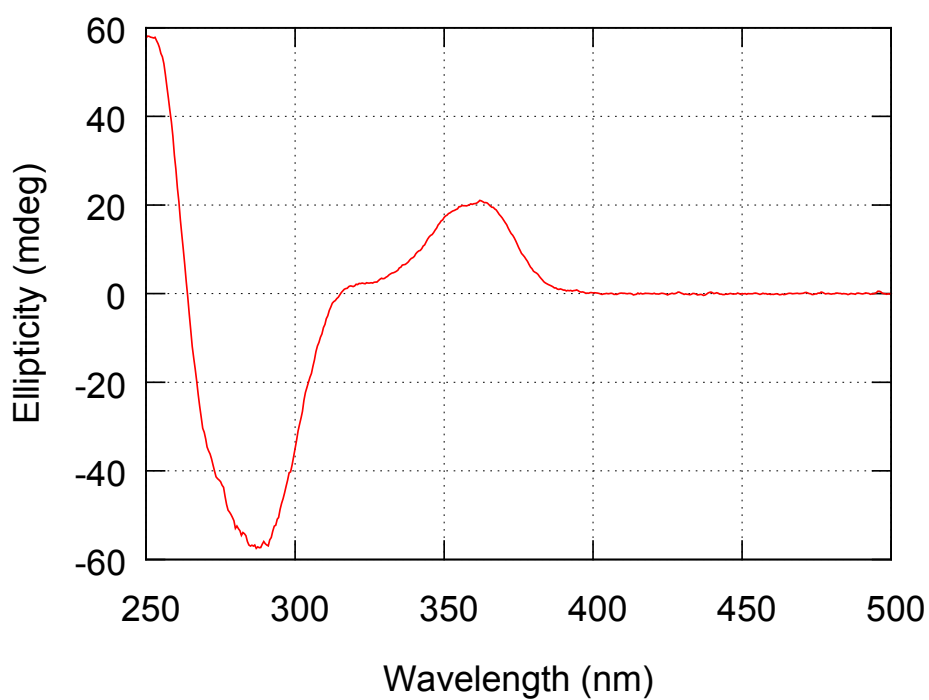


Figure S105. CD spectrum of **3b(40/60)** in 2,2,4-trimethylpentane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

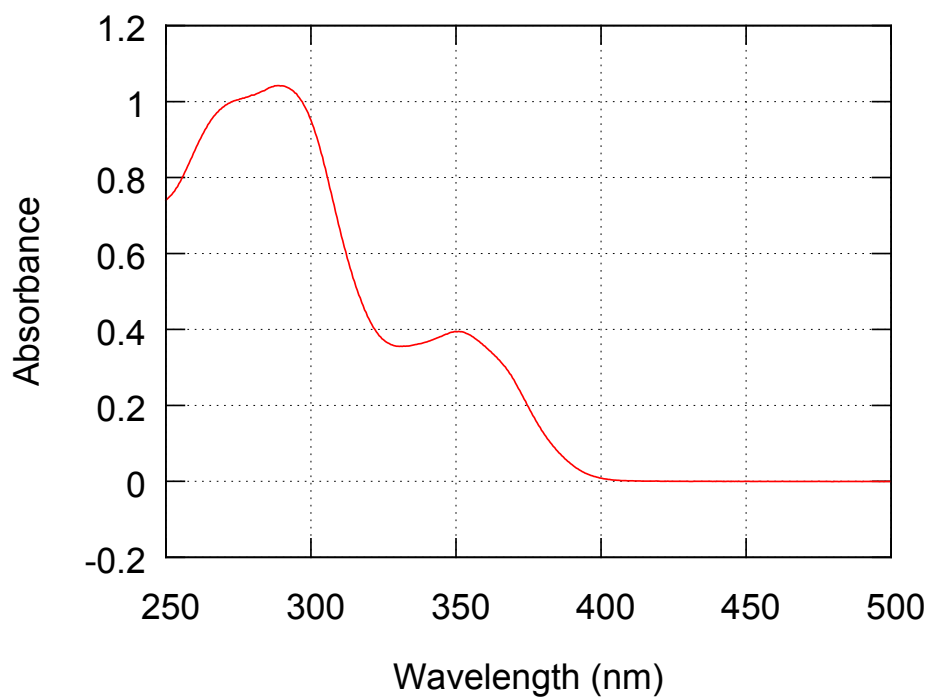


Figure S106. UV-vis absorption spectrum of **3b(40/60)** in butylcyclohexane ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

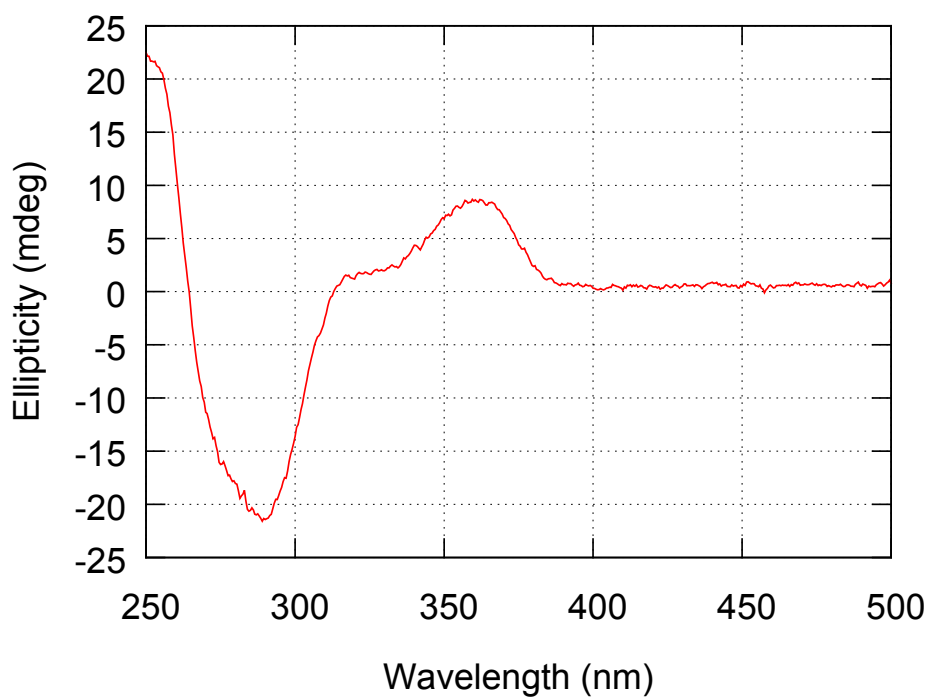


Figure S107. CD spectrum of **3b(40/60)** in butylcyclohexane ( $2.78 \times 10^{-2}$  g/L, path length = 10 mm).

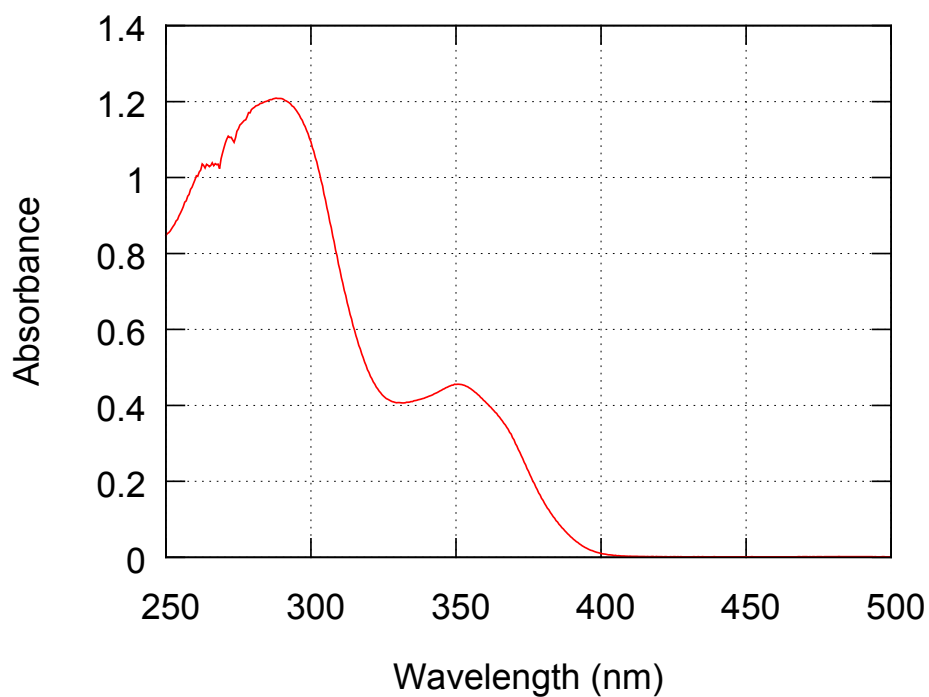


Figure S108. UV-vis absorption spectrum of **3b(40/60)** in *n*-undecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

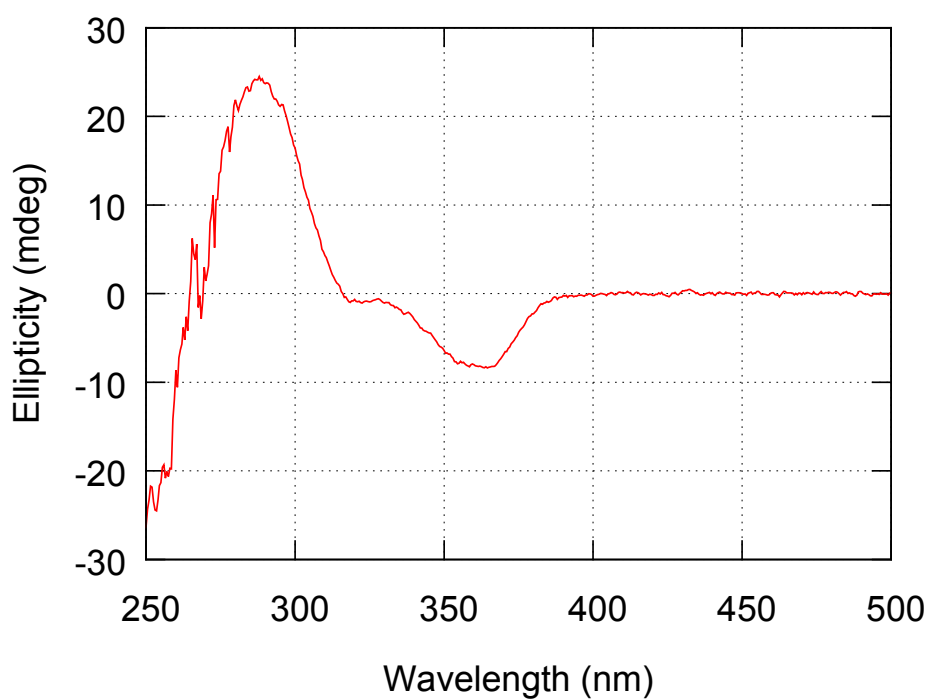


Figure S109. CD spectrum of **3b(40/60)** in *n*-undecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

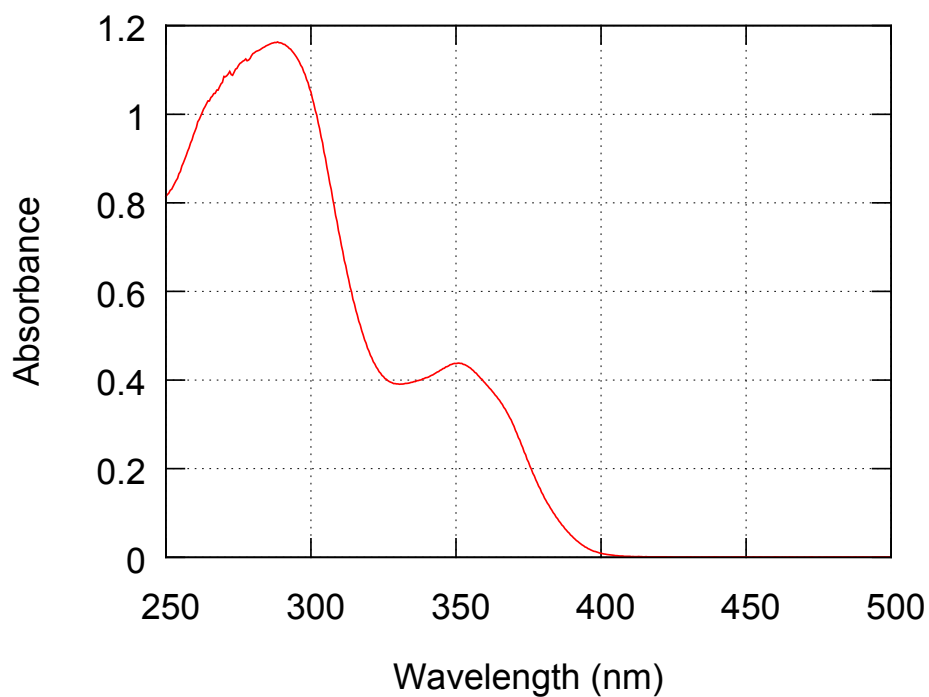


Figure S110. UV-vis absorption spectrum of **3b(40/60)** in *n*-dodecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

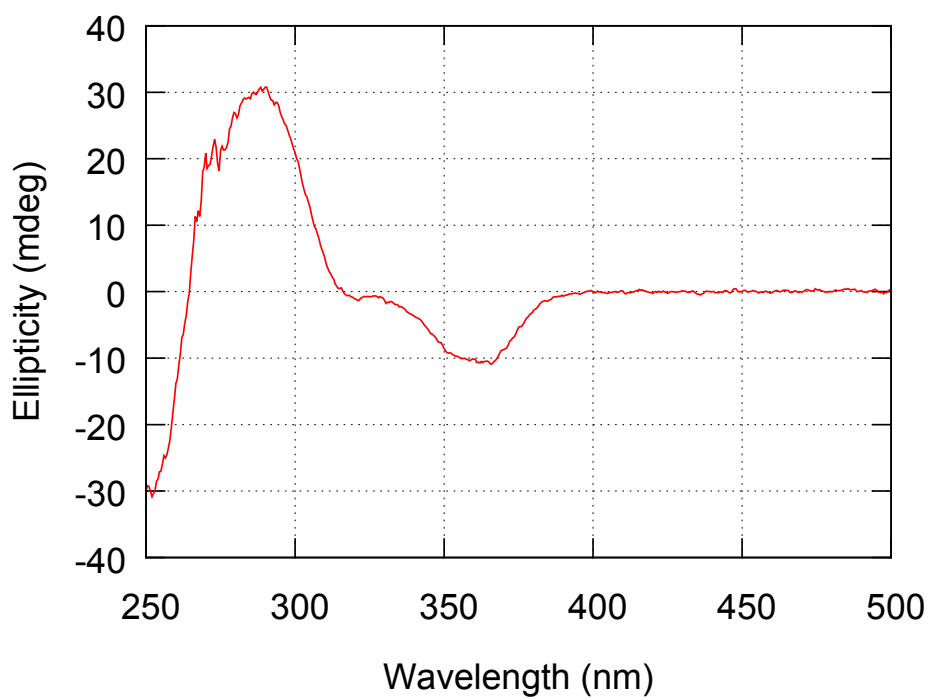


Figure S111. CD spectrum of **3b(40/60)** in *n*-dodecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

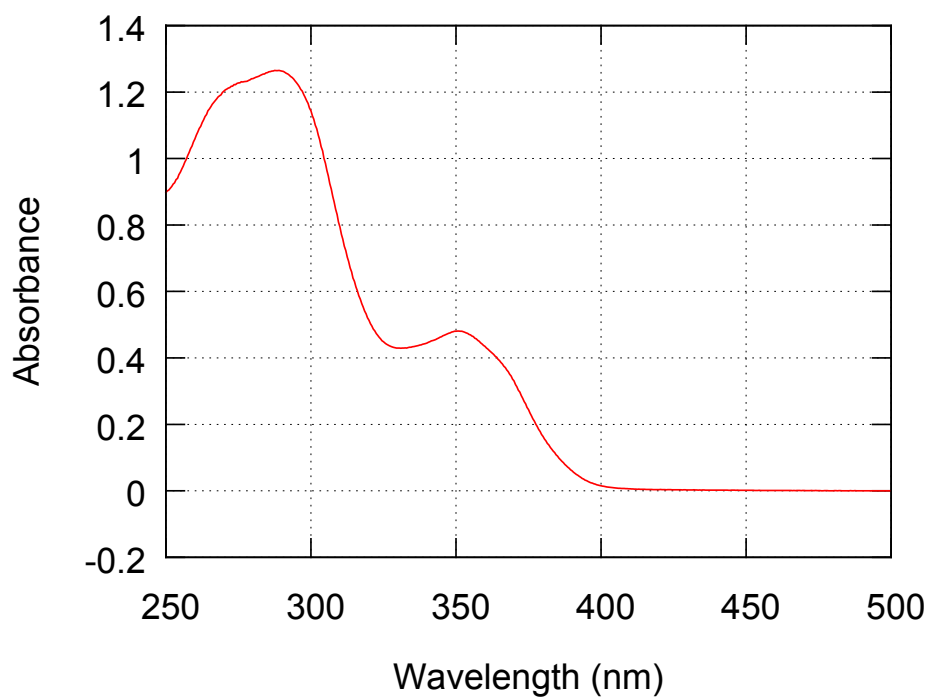


Figure S112. UV-vis absorption spectrum of **3b(40/60)** in *n*-tridecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

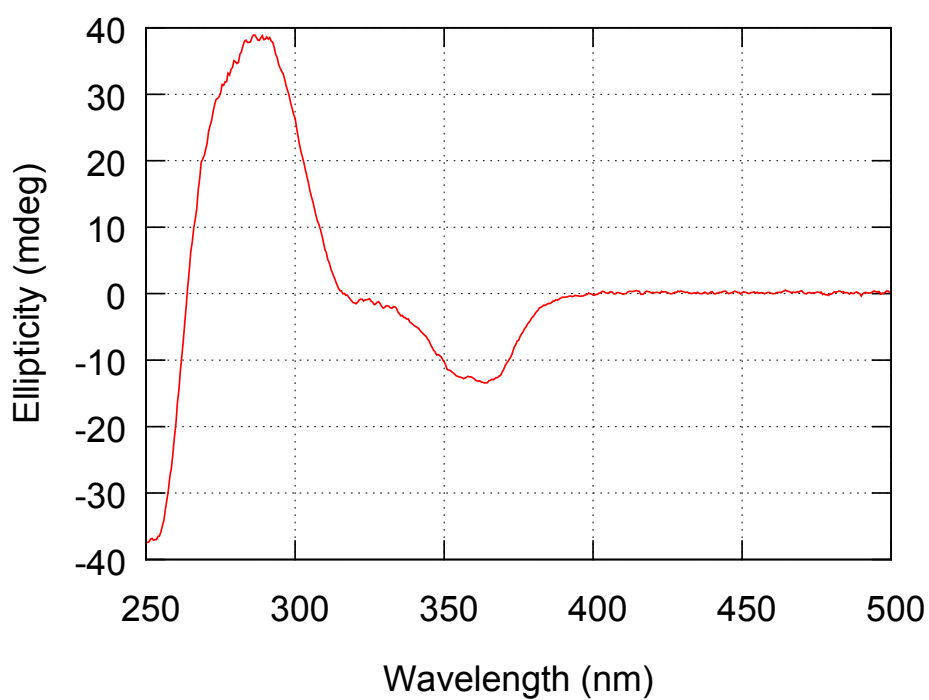


Figure S113. CD spectrum of **3b(40/60)** in *n*-tridecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

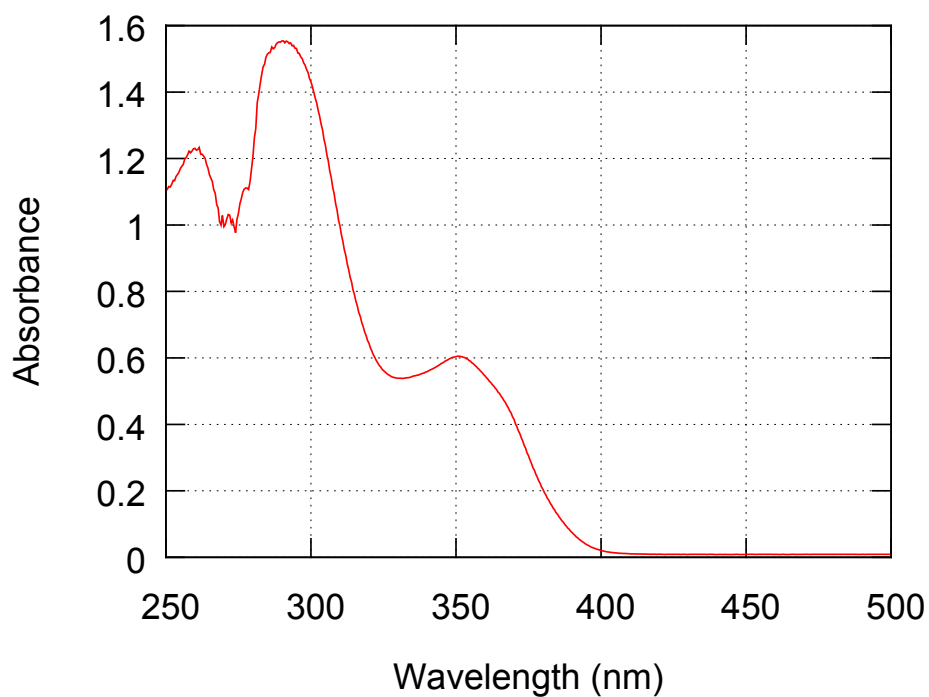


Figure S114. UV-vis absorption spectrum of **3b(40/60)** in *n*-tetradecane ( $2.98 \times 10^{-2}$  g/L, path length = 10 mm).

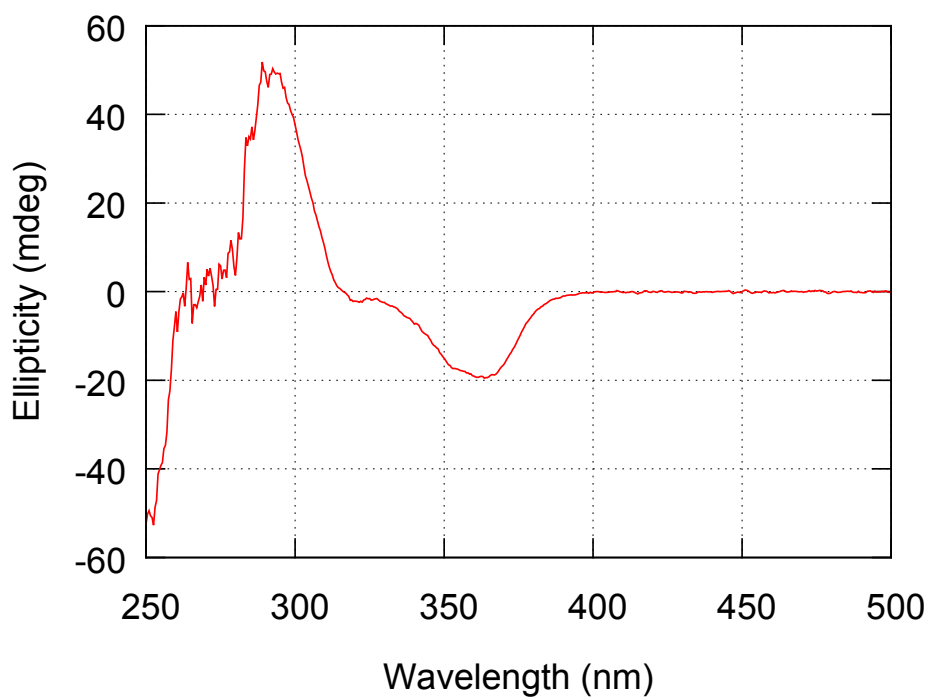


Figure S115. CD spectrum of **3b(40/60)** in *n*-tetradecane ( $2.98 \times 10^{-2}$  g/L, path length = 10 mm).

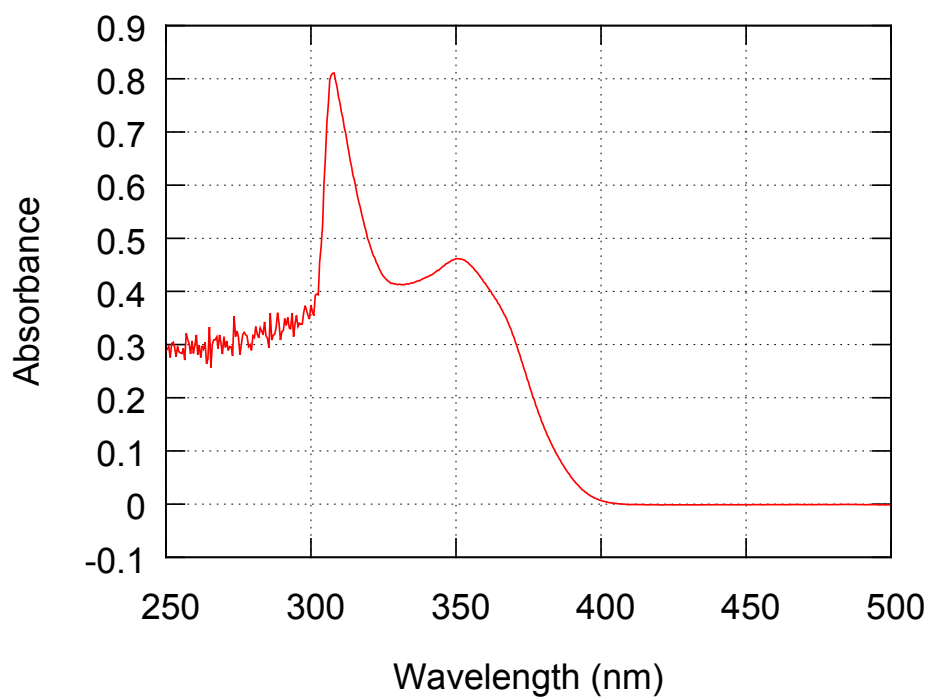


Figure S116. UV-vis absorption spectrum of **3b(40/60)** in *n*-pentadecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

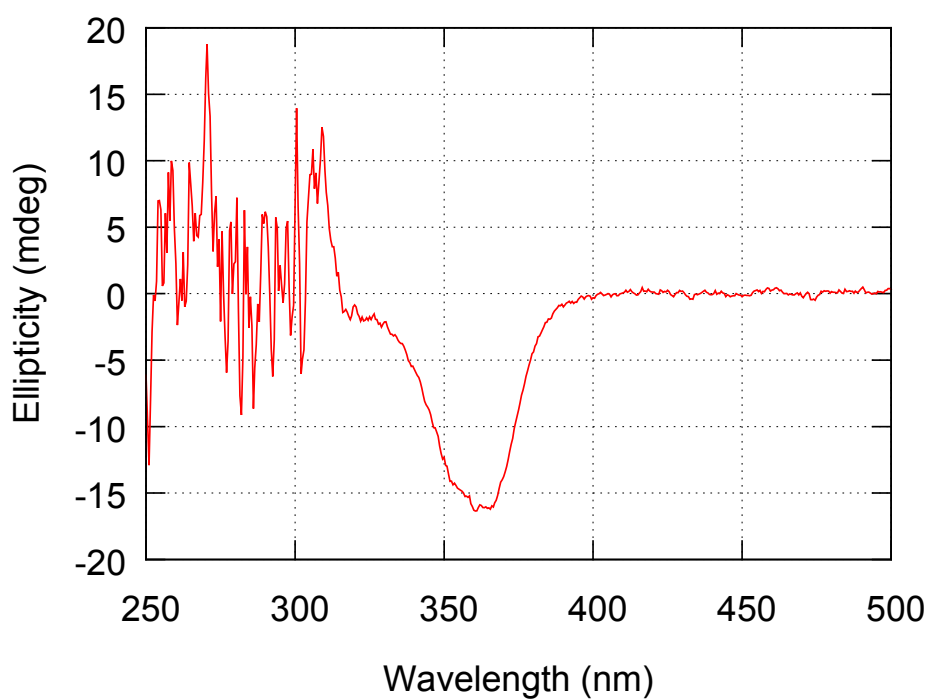


Figure S117. CD spectrum of **3b(40/60)** in *n*-pentadecane ( $1.75 \times 10^{-2}$  g/L, path length = 10 mm).

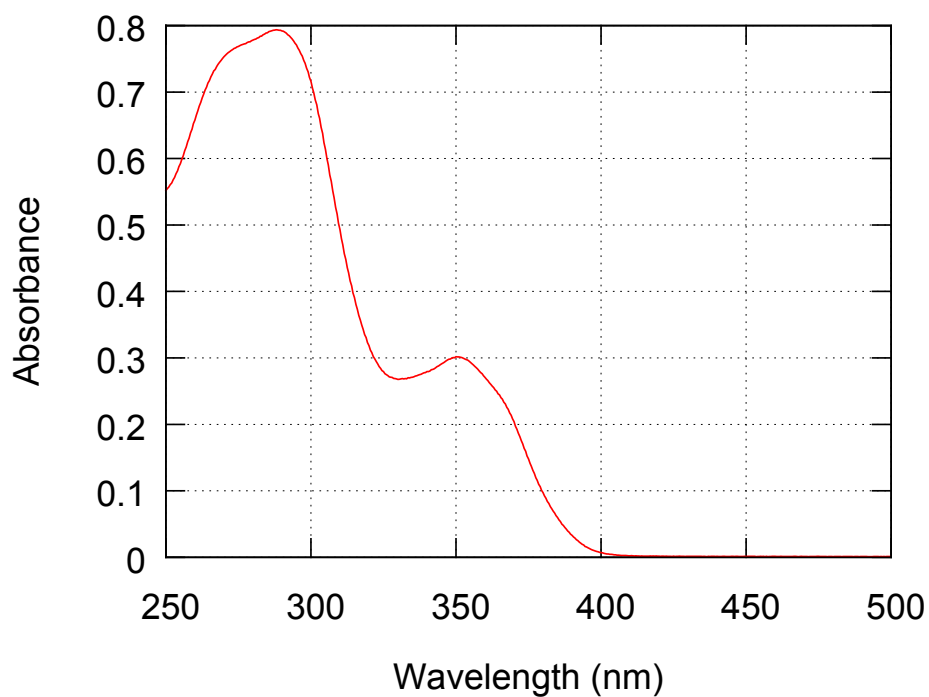


Figure S118. UV-vis absorption spectrum of **3b(40/60)** in *n*-hexadecane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

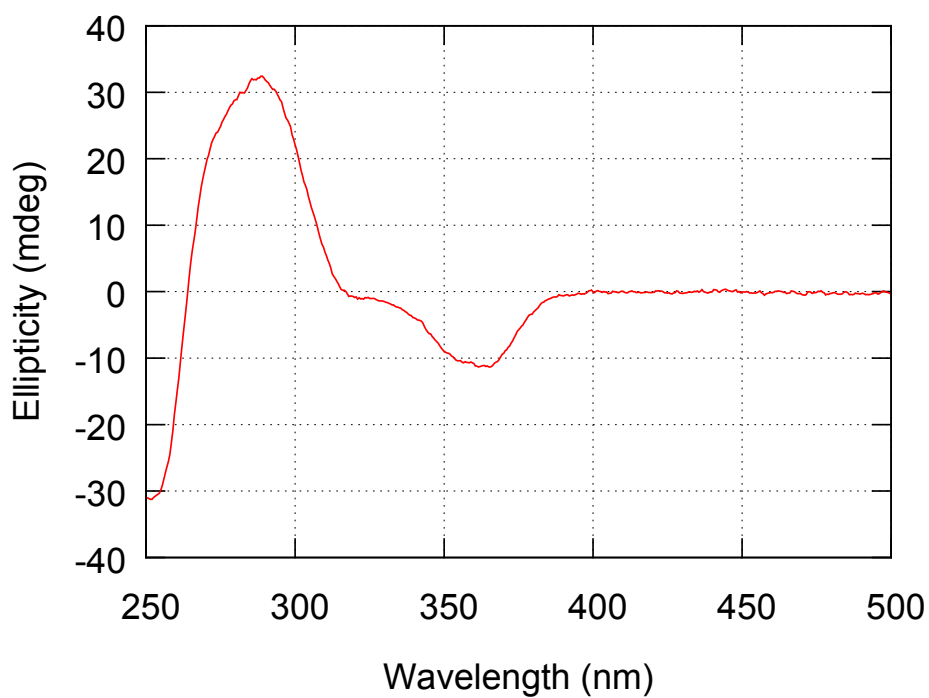


Figure S119. CD spectrum of **3b(40/60)** in *n*-hexadecane ( $3.00 \times 10^{-2}$  g/L, path length = 10 mm).

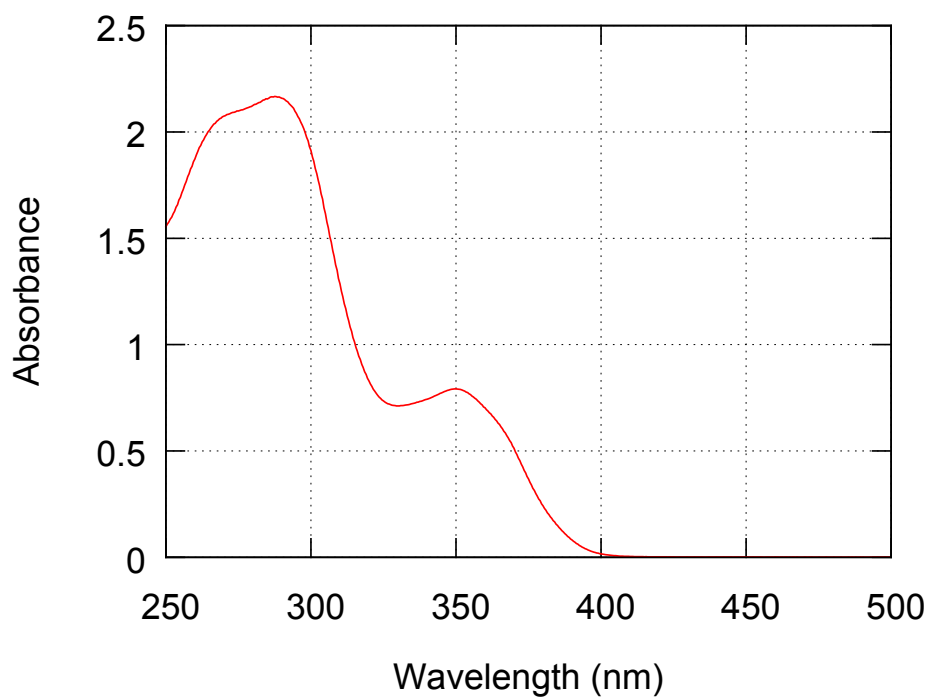


Figure S120. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-pentane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

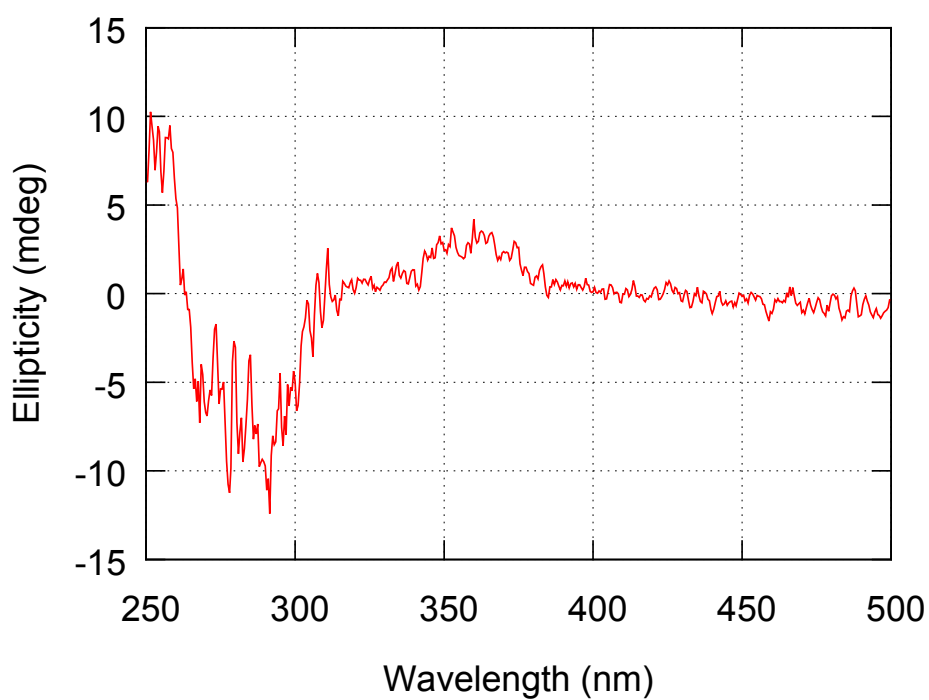


Figure S121. CD spectrum of **3b(2.5/97.5)** in *n*-pentane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

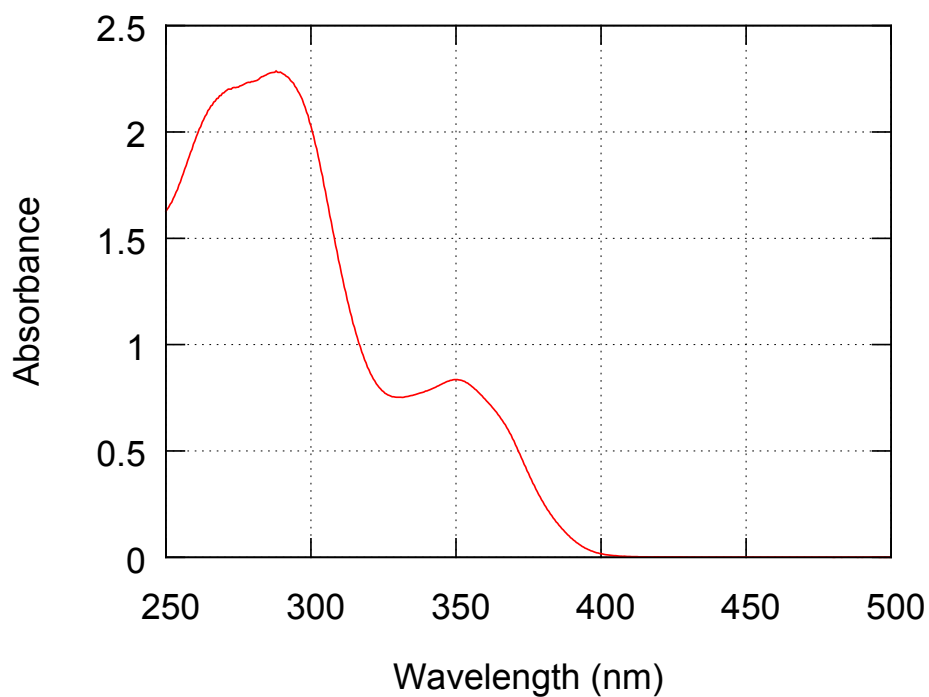


Figure S122. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-hexane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

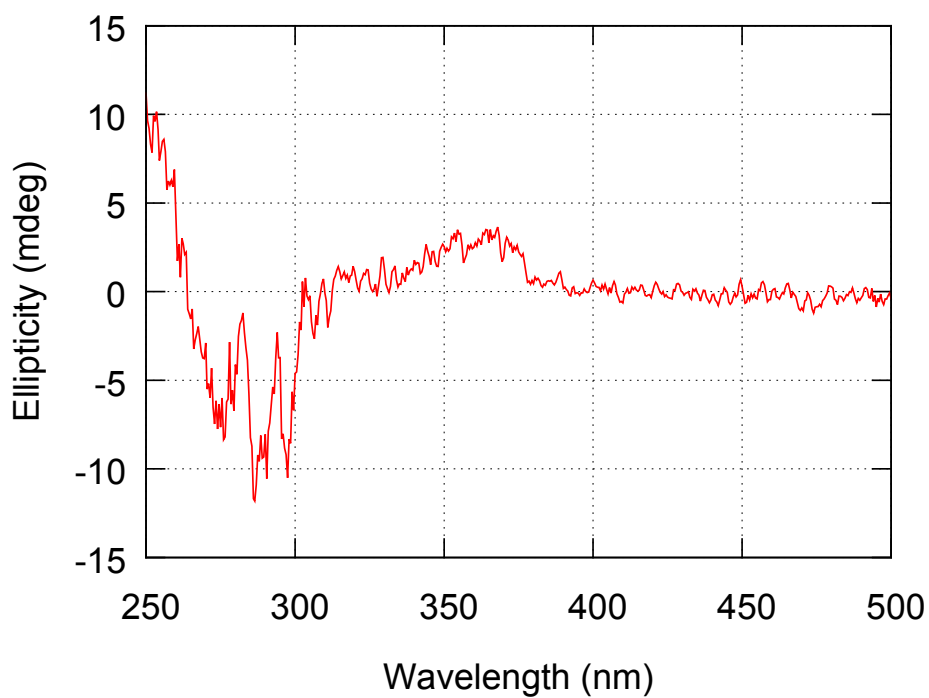


Figure S123. CD spectrum of **3b(2.5/97.5)** in *n*-hexane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

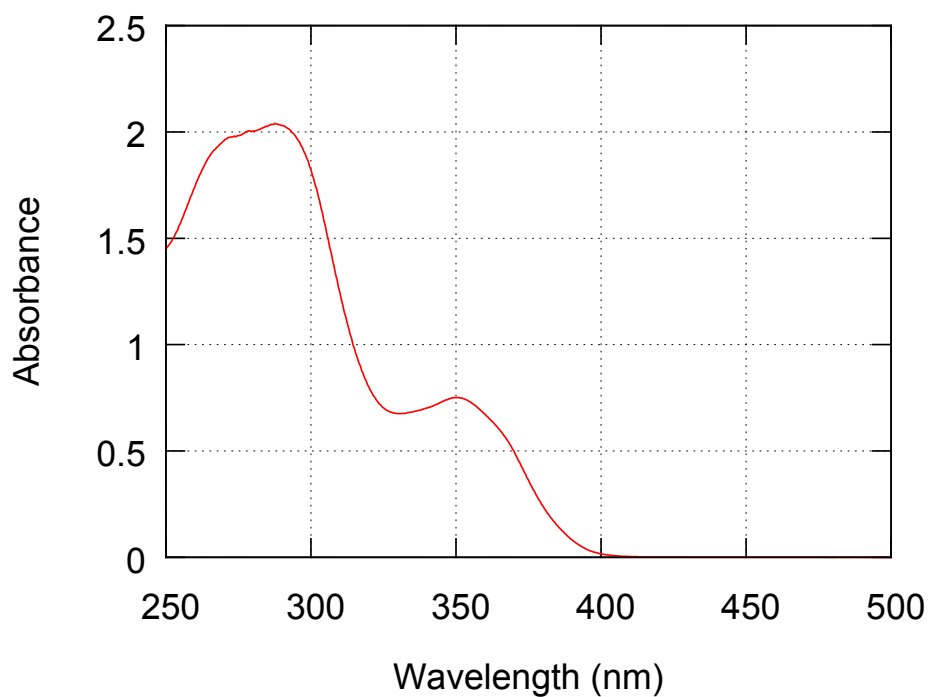


Figure S124. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-heptane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

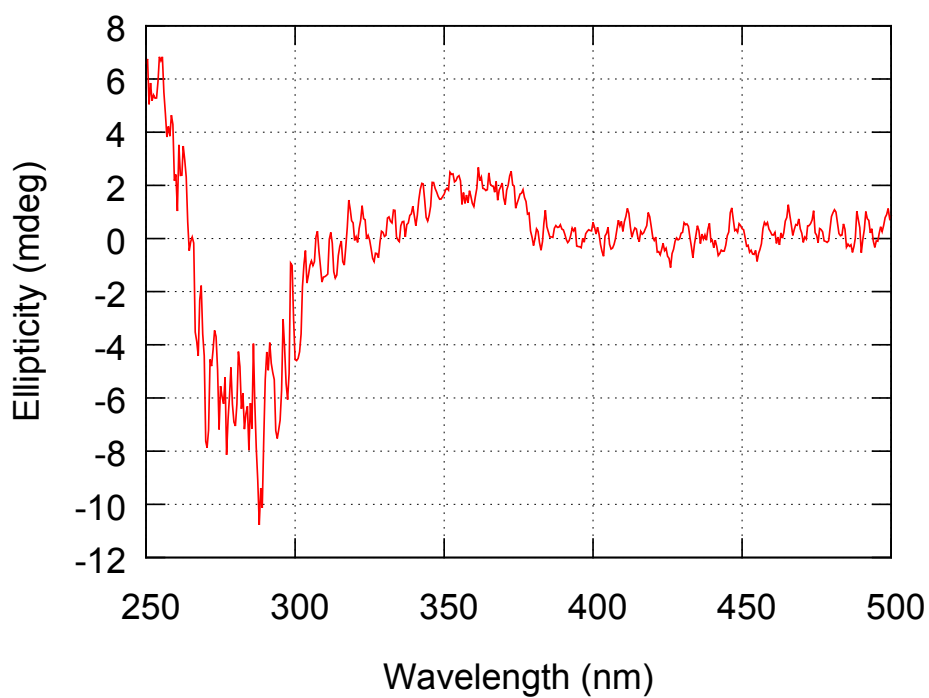


Figure S125. CD spectrum of **3b(2.5/97.5)** in *n*-heptane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

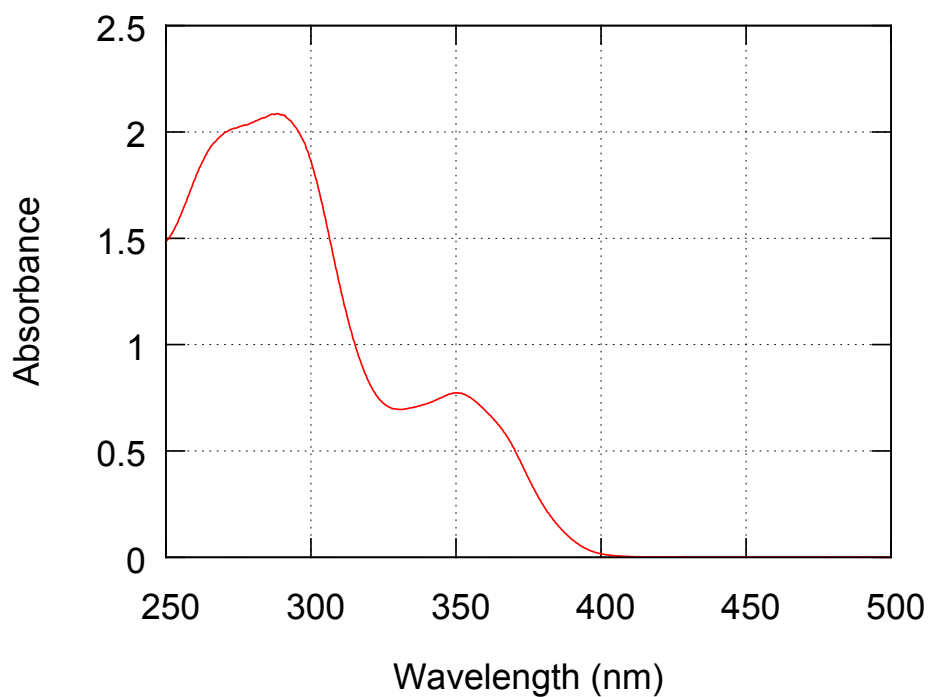


Figure S126. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-octane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

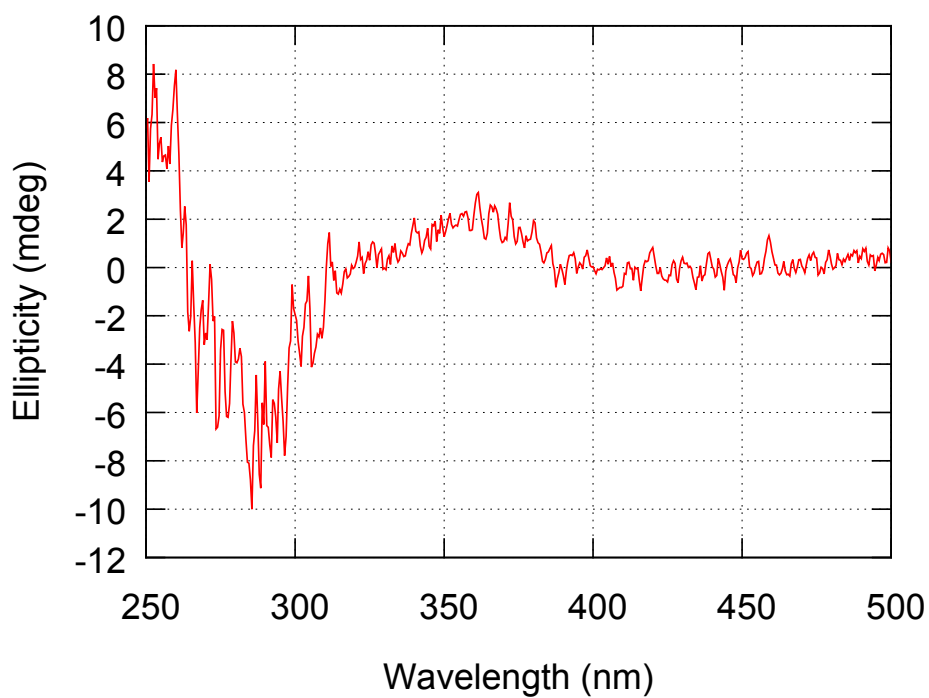


Figure S127. CD spectrum of **3b(2.5/97.5)** in *n*-octane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

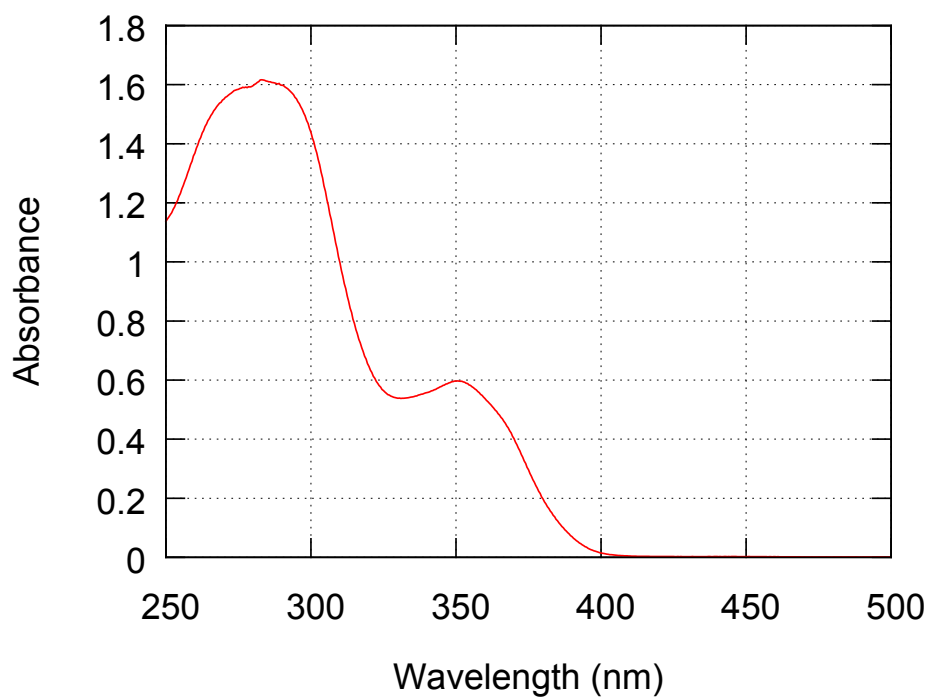


Figure S128. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-nonane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

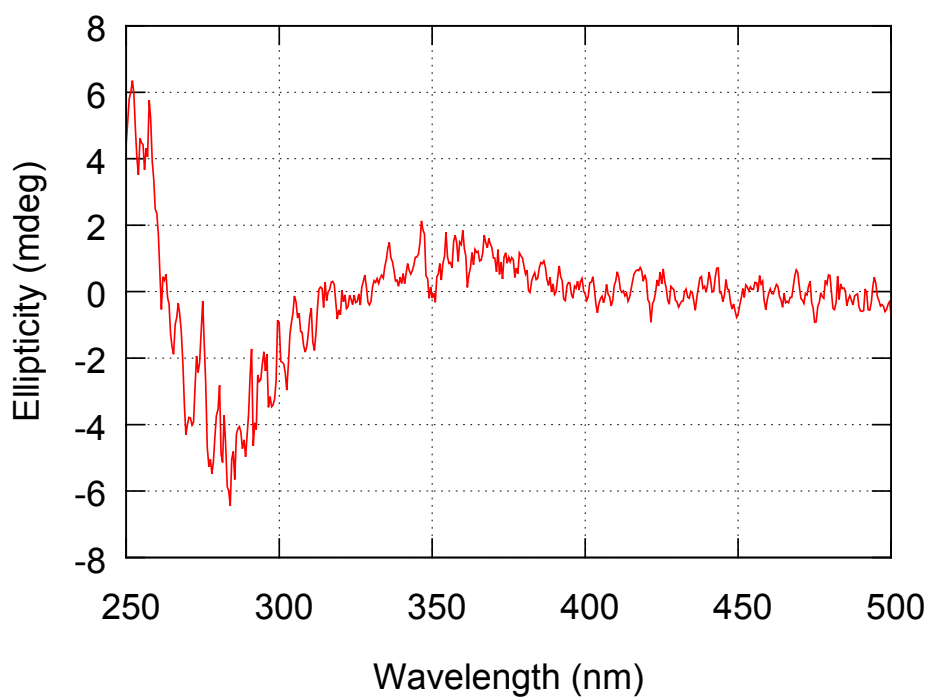


Figure S129. CD spectrum of **3b(2.5/97.5)** in *n*-nonane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

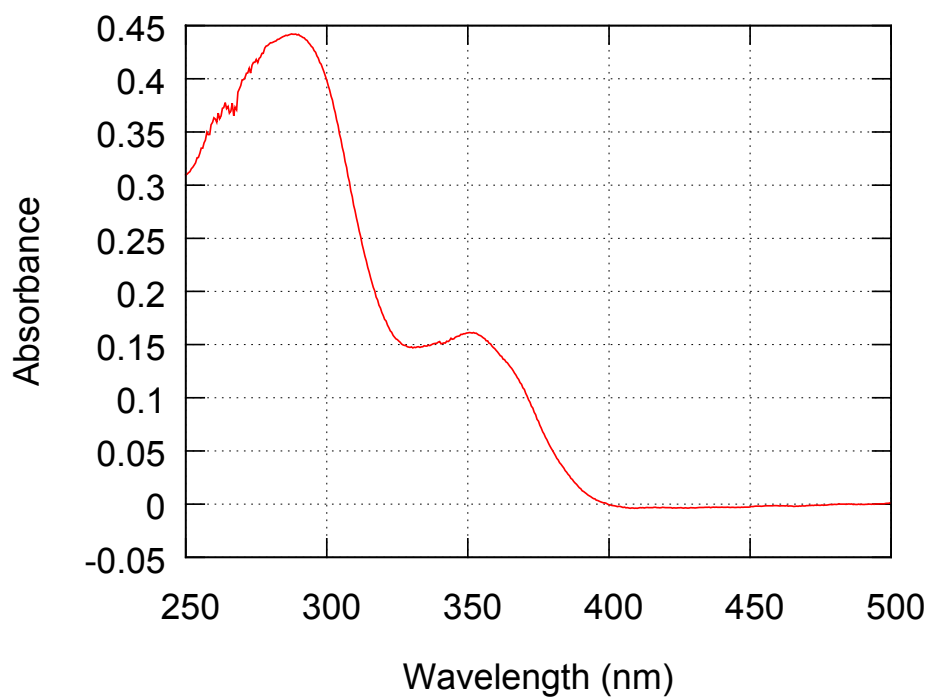


Figure S130. UV-vis absorption spectrum of **3b(2.5/97.5)** in *n*-decane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

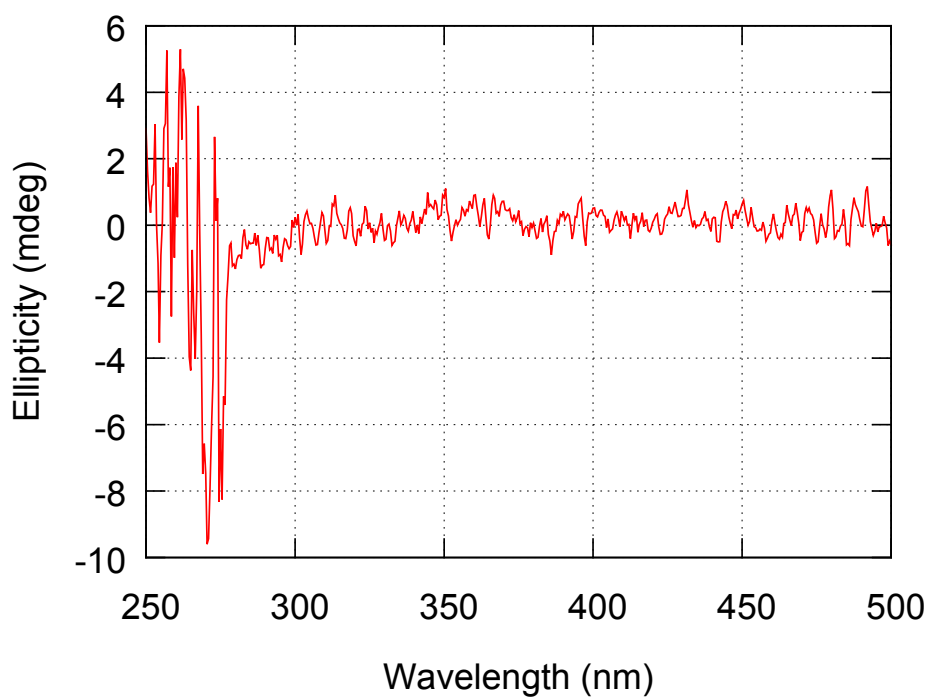


Figure S131. CD spectrum of **3b(2.5/97.5)** in *n*-decane ( $3.34 \times 10^{-2}$  g/L, path length = 10 mm).

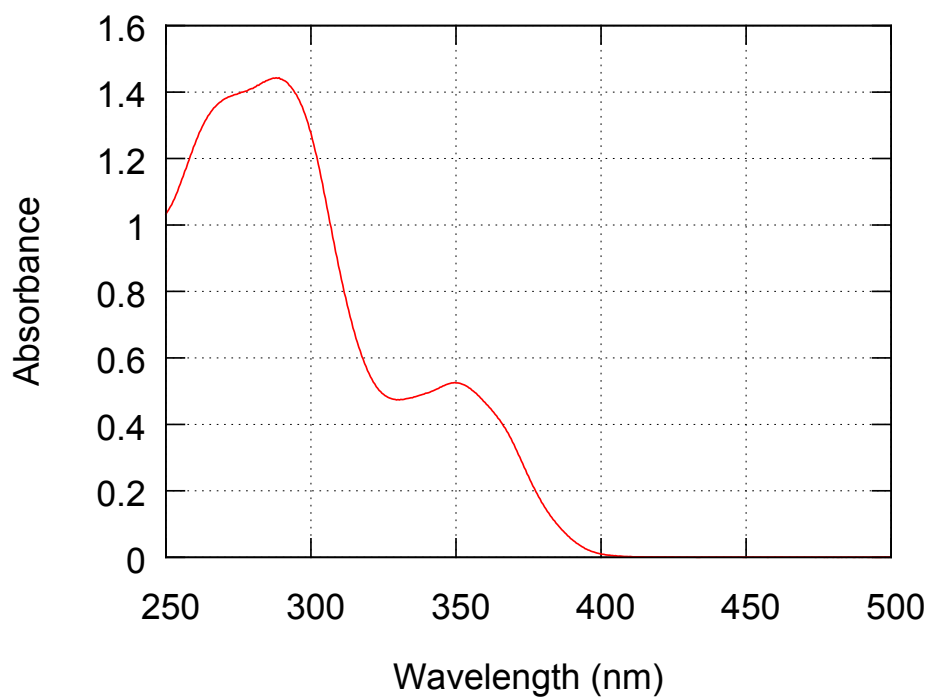


Figure S132. UV-vis absorption spectrum of **3b(5/95)** in *n*-pentane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

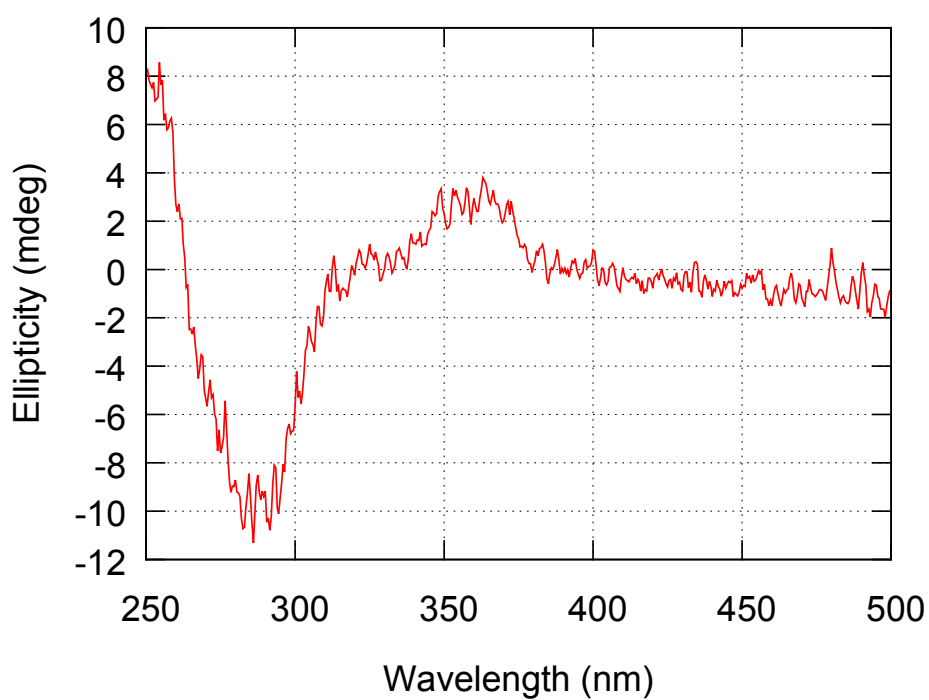


Figure S133. CD spectrum of **3b(5/95)** in *n*-pentane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

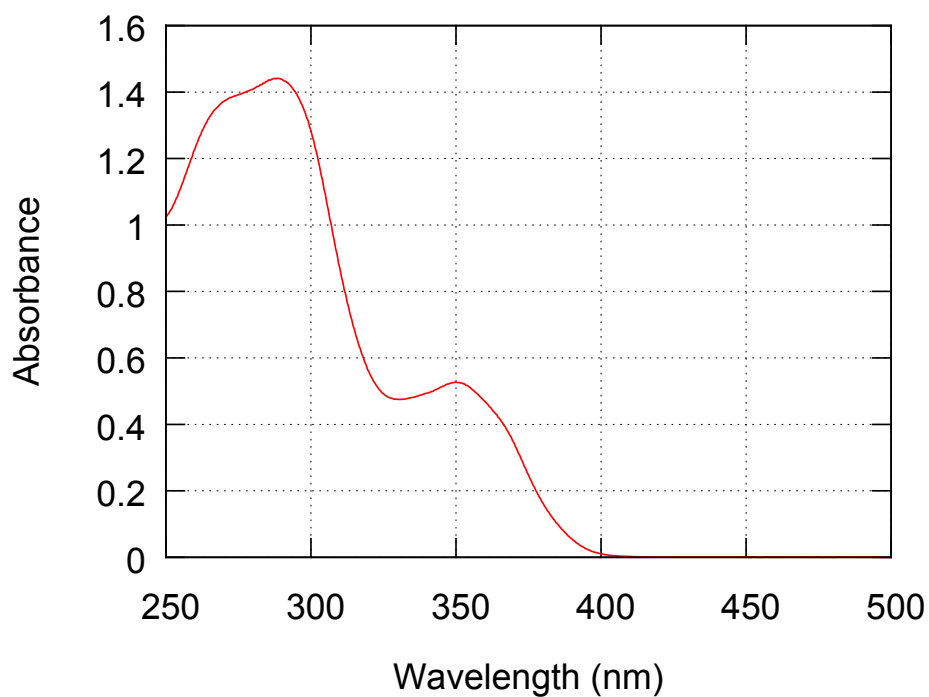


Figure S134. UV-vis absorption spectrum of **3b(5/95)** in *n*-hexane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

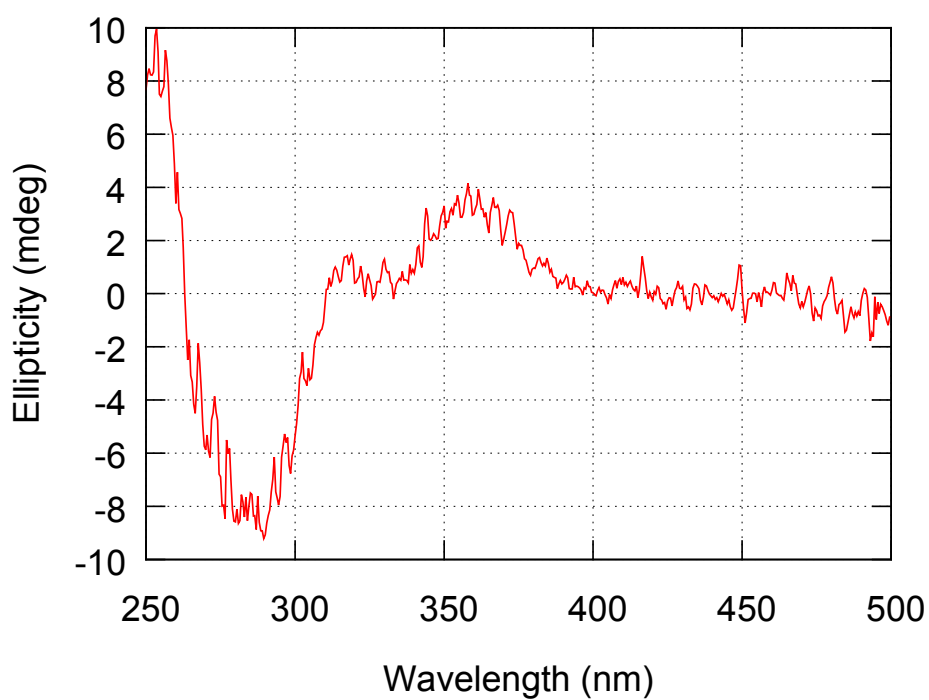


Figure S135. CD spectrum of **3b(5/95)** in *n*-hexane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

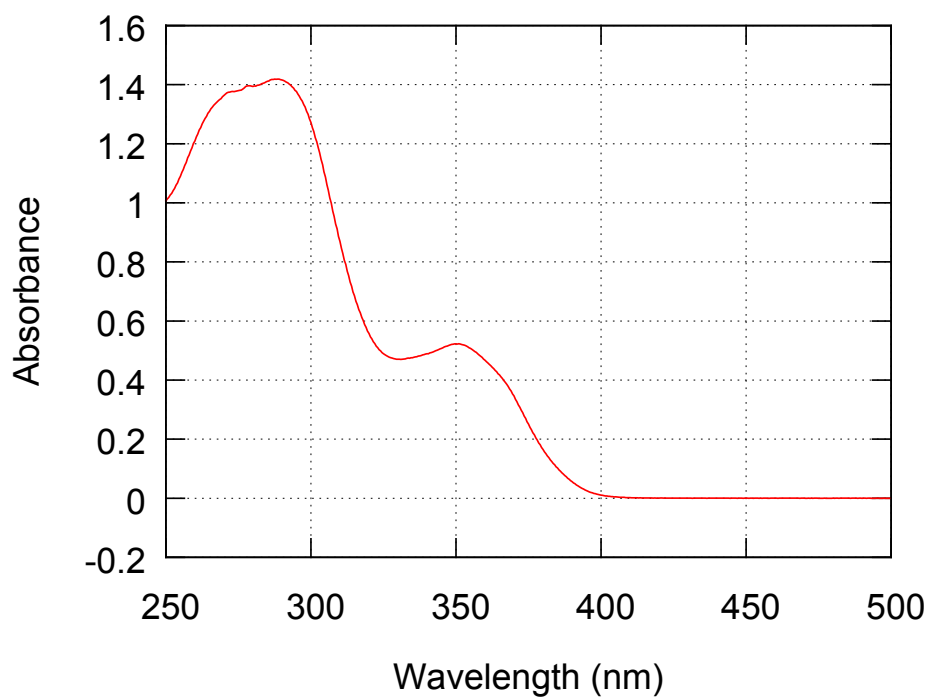


Figure S136. UV-vis absorption spectrum of **3b(5/95)** in *n*-heptane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

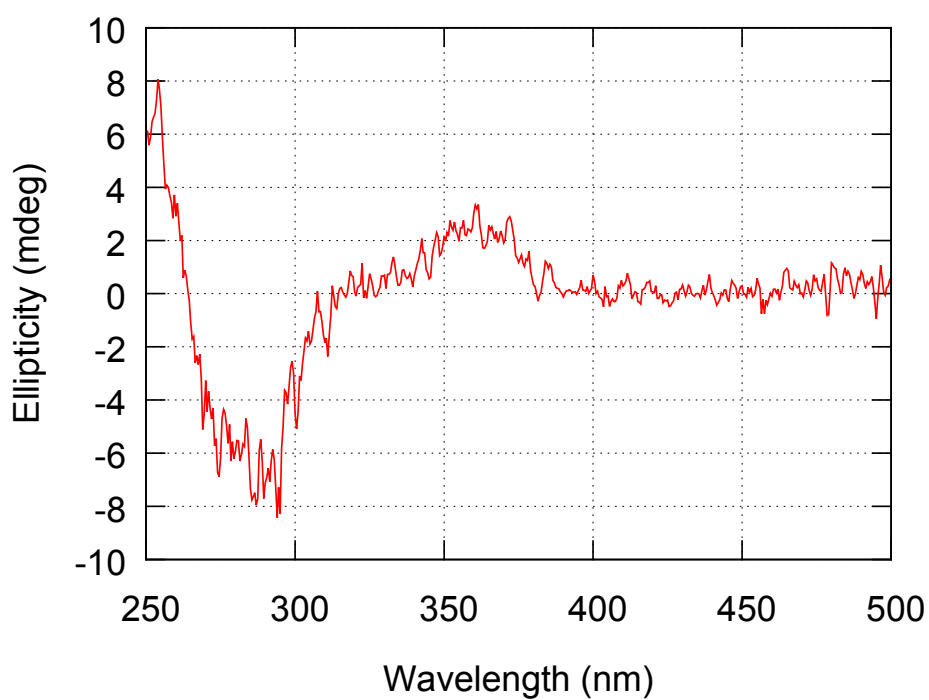


Figure S137. CD spectrum of **3b(5/95)** in *n*-heptane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

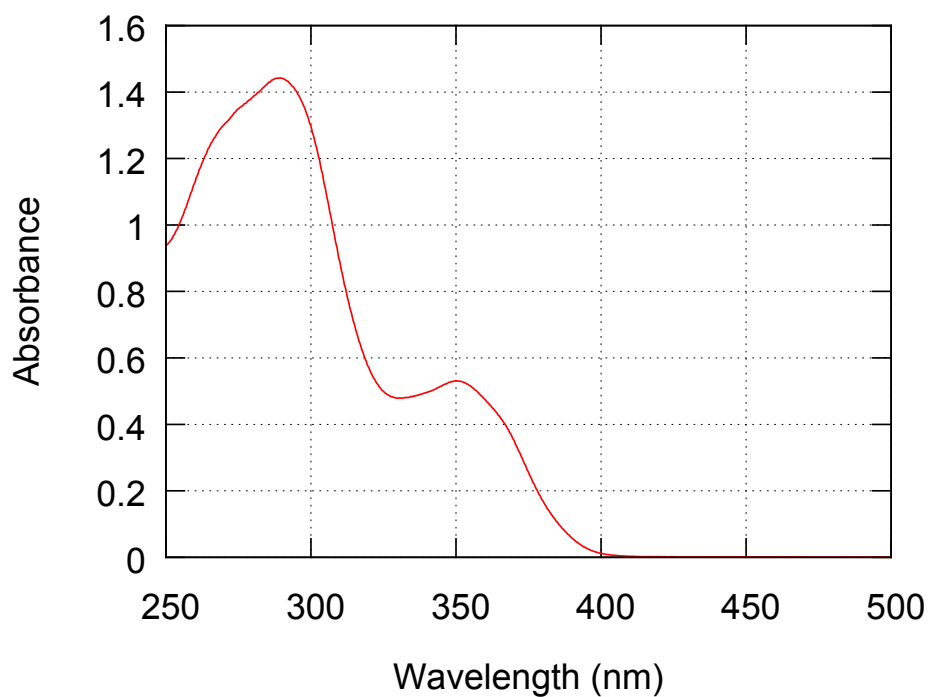


Figure S138. UV-vis absorption spectrum of **3b(5/95)** in *n*-octane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

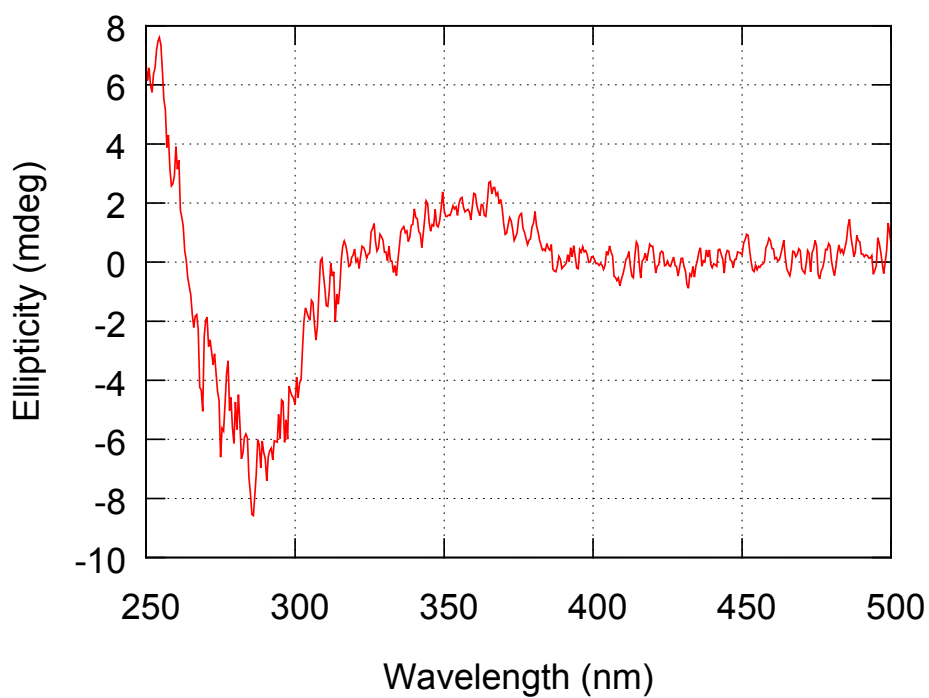


Figure S139. CD spectrum of **3b(5/95)** in *n*-octane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

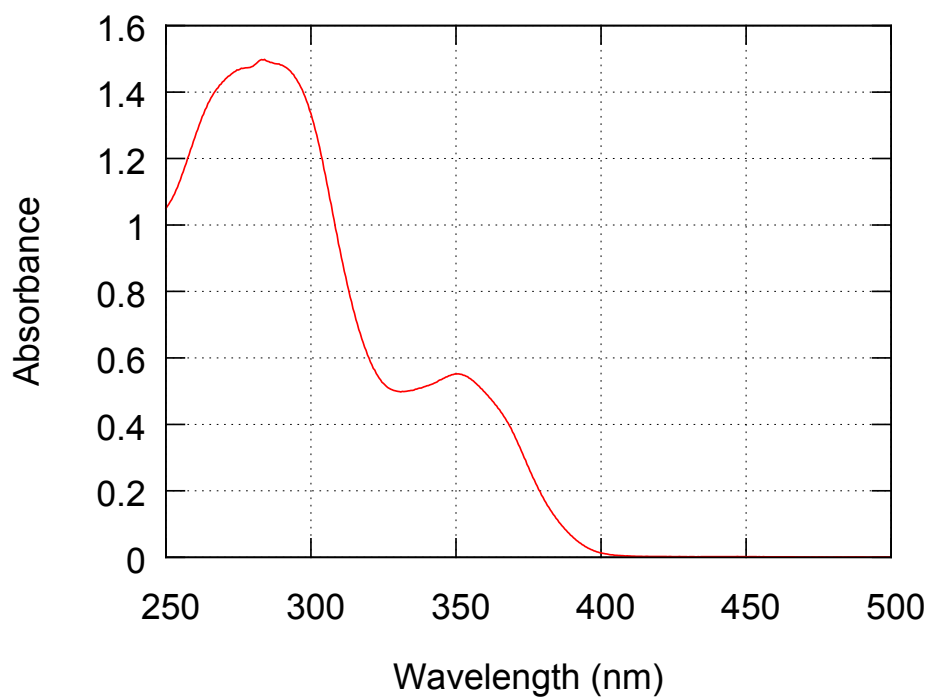


Figure S140. UV-vis absorption spectrum of **3b(5/95)** in *n*-nonane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

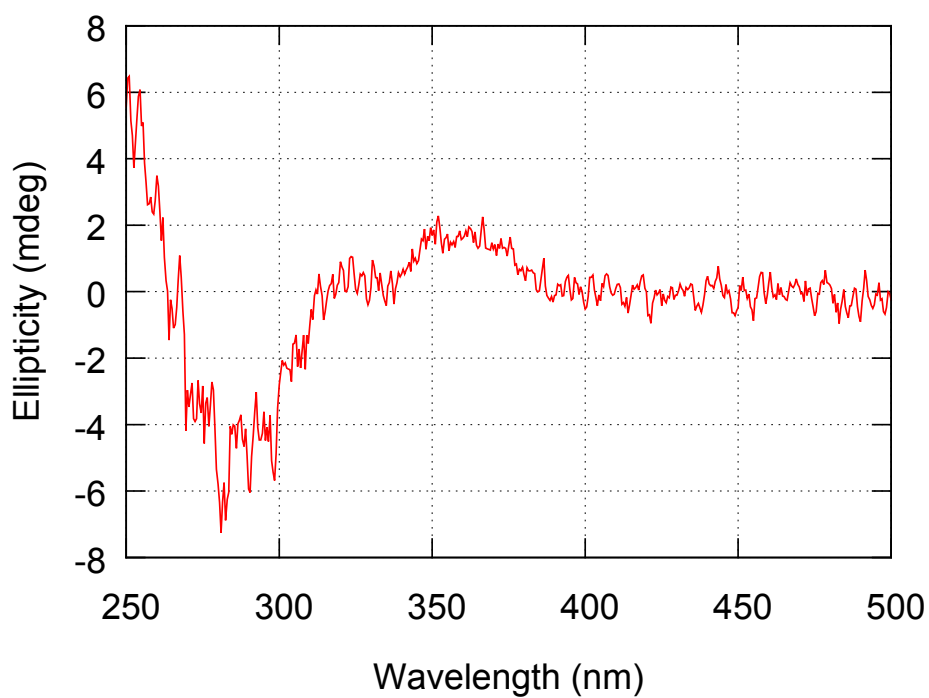


Figure S141. CD spectrum of **3b(5/95)** in *n*-nonane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

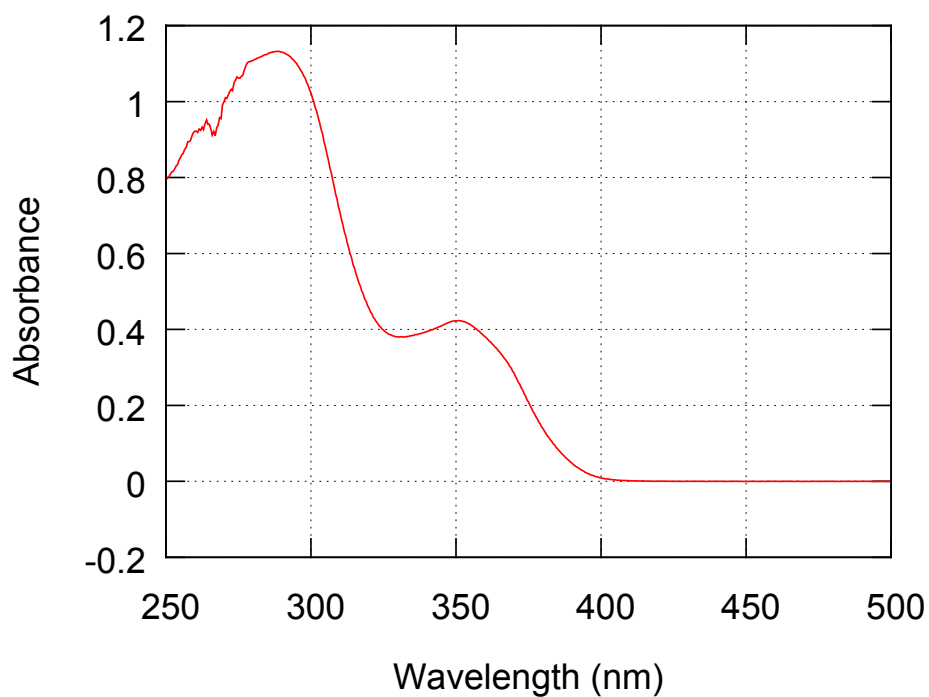


Figure S142. UV-vis absorption spectrum of **3b(5/95)** in *n*-decane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

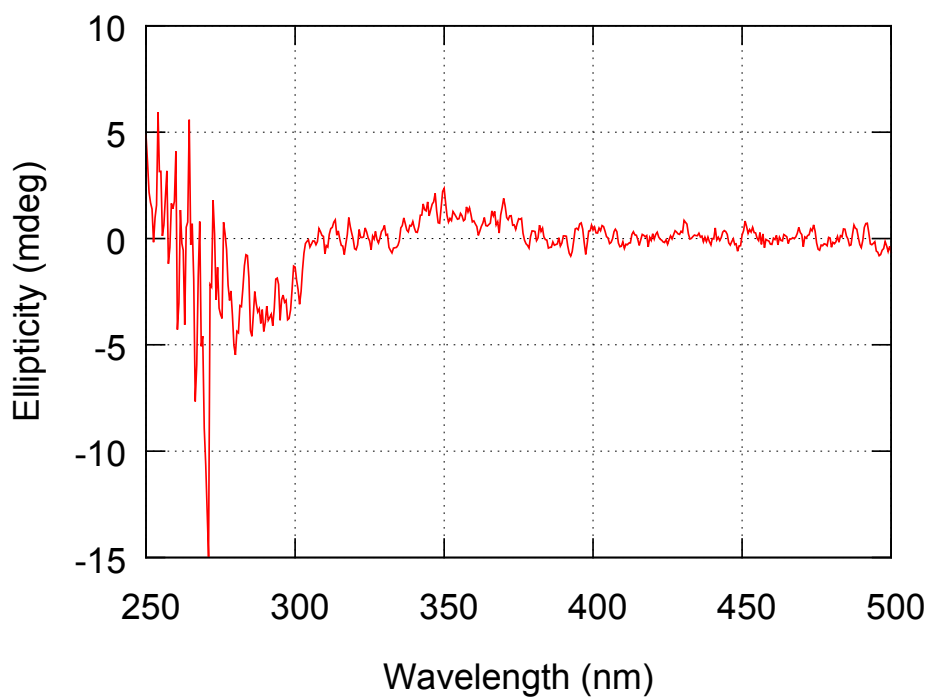


Figure S143. CD spectrum of **3b(5/95)** in *n*-decane ( $2.12 \times 10^{-2}$  g/L, path length = 10 mm).

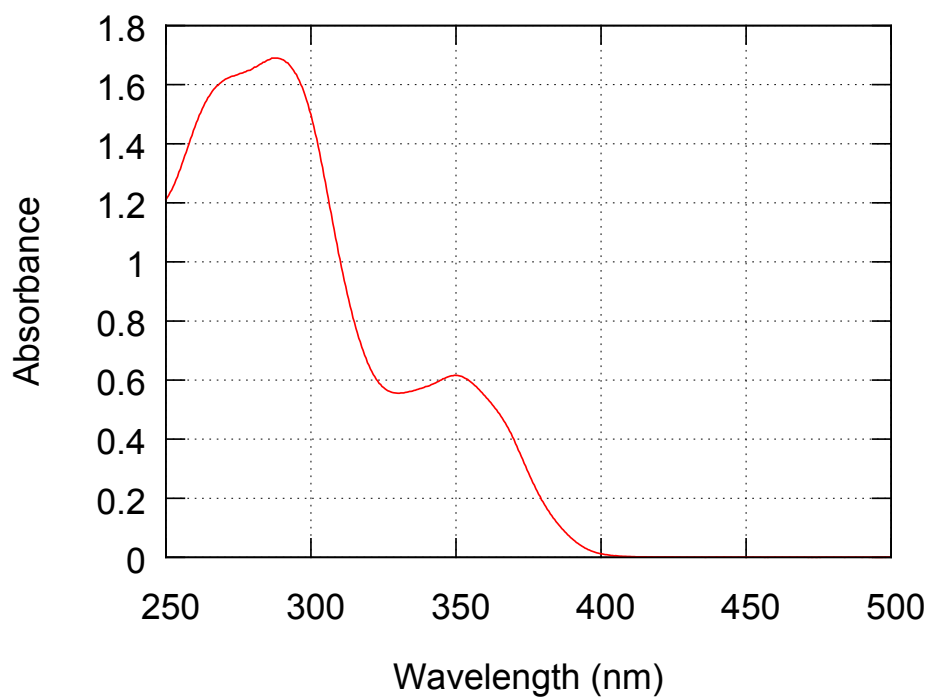


Figure S144. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-pentane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

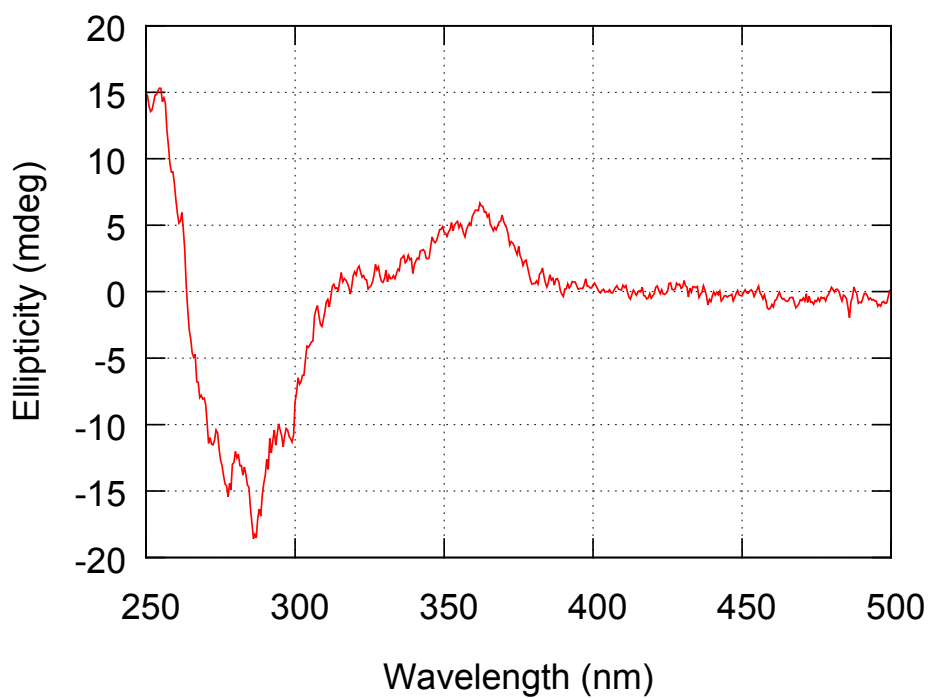


Figure S145. CD spectrum of **3b(7.5/92.5)** in *n*-pentane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

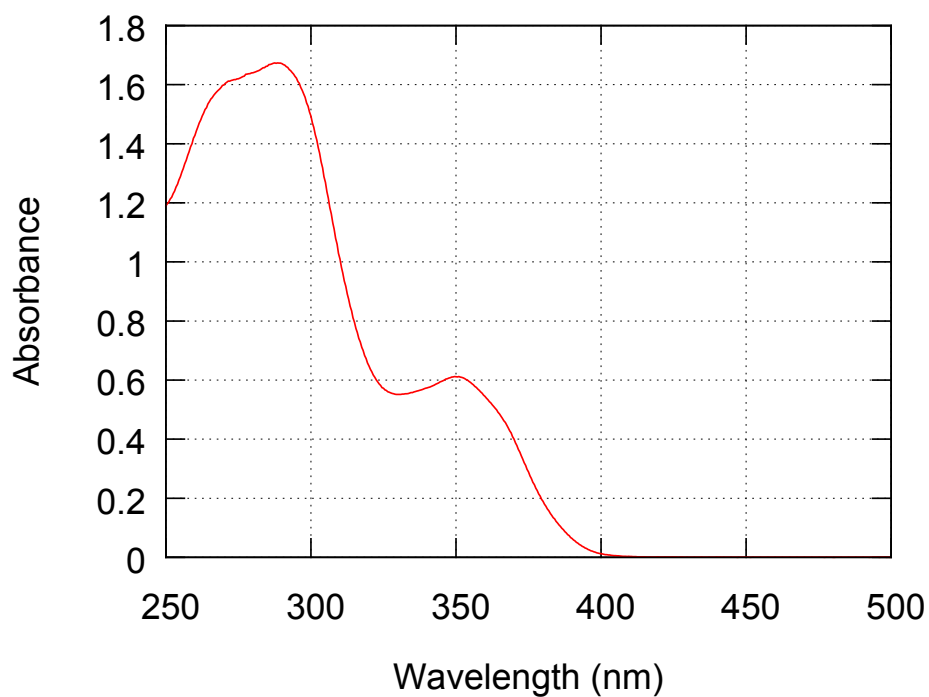


Figure S146. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-hexane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

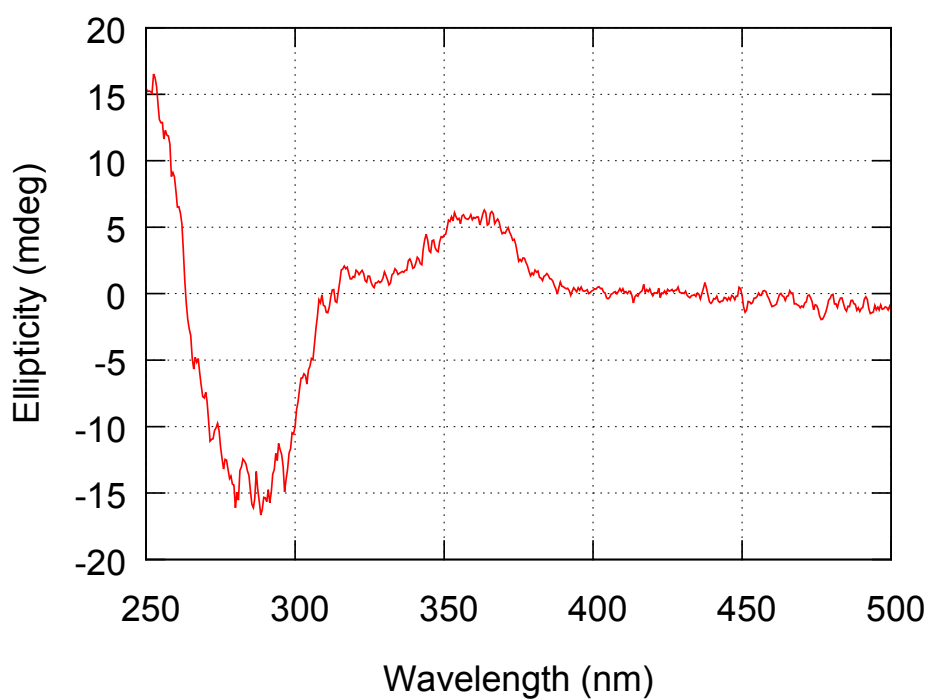


Figure S147. CD spectrum of **3b(7.5/92.5)** in *n*-hexane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

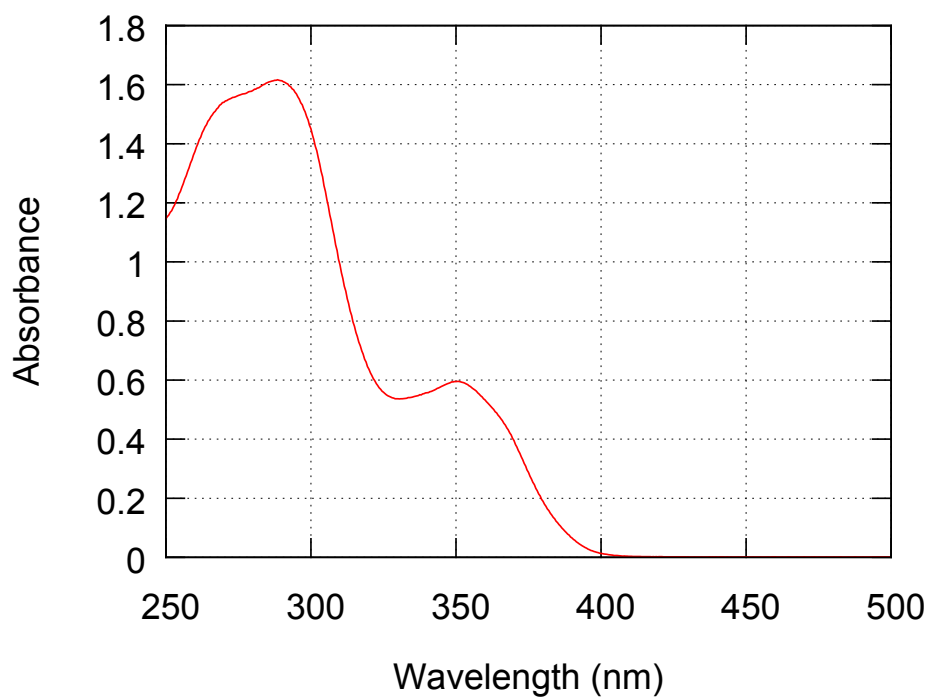


Figure S148. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-heptane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

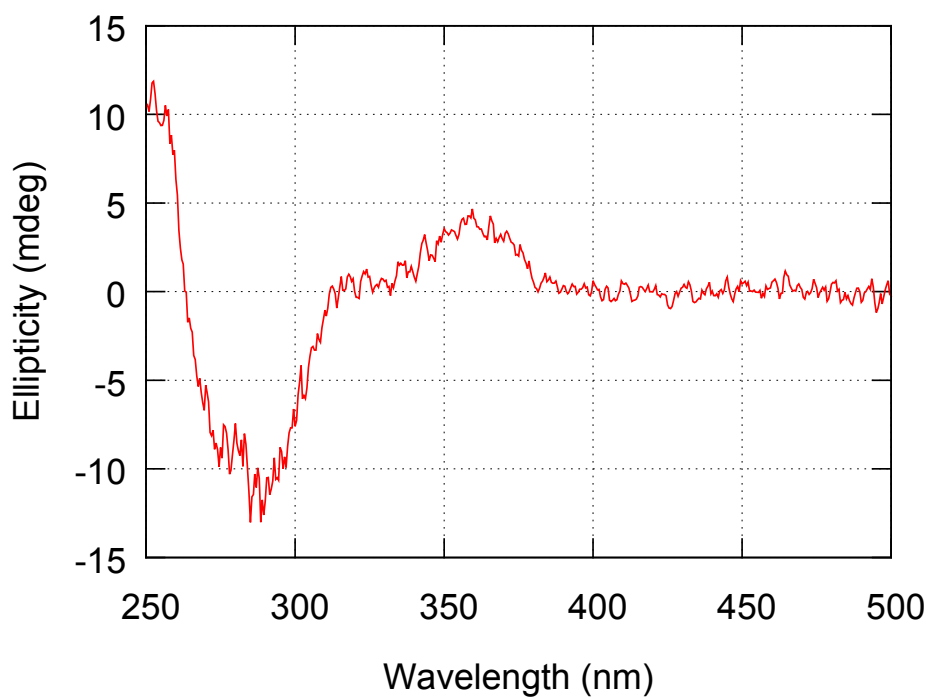


Figure S149. CD spectrum of **3b(7.5/92.5)** in *n*-heptane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

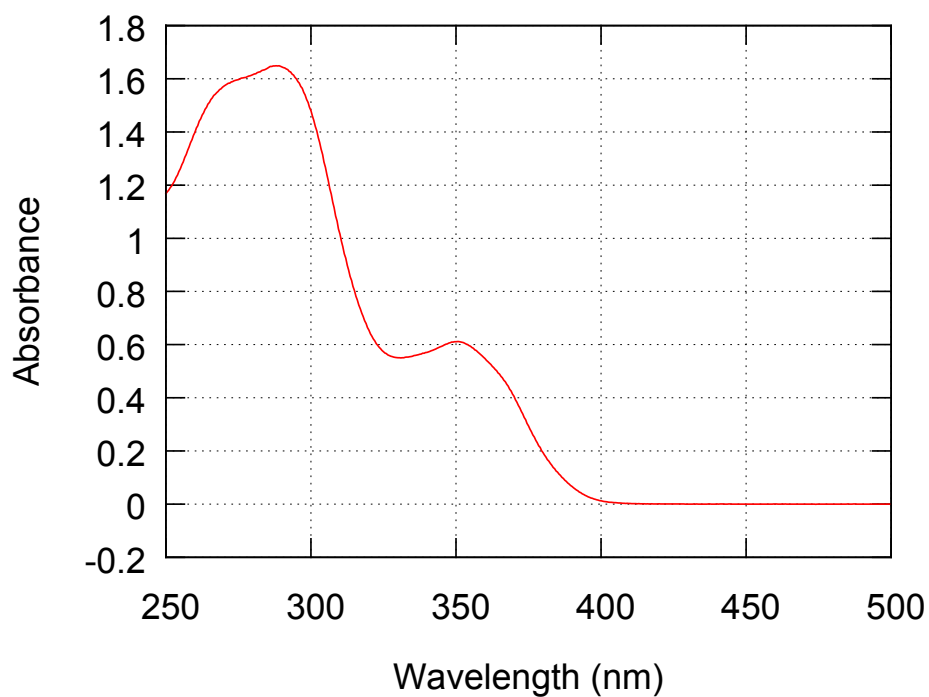


Figure S150. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-octane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

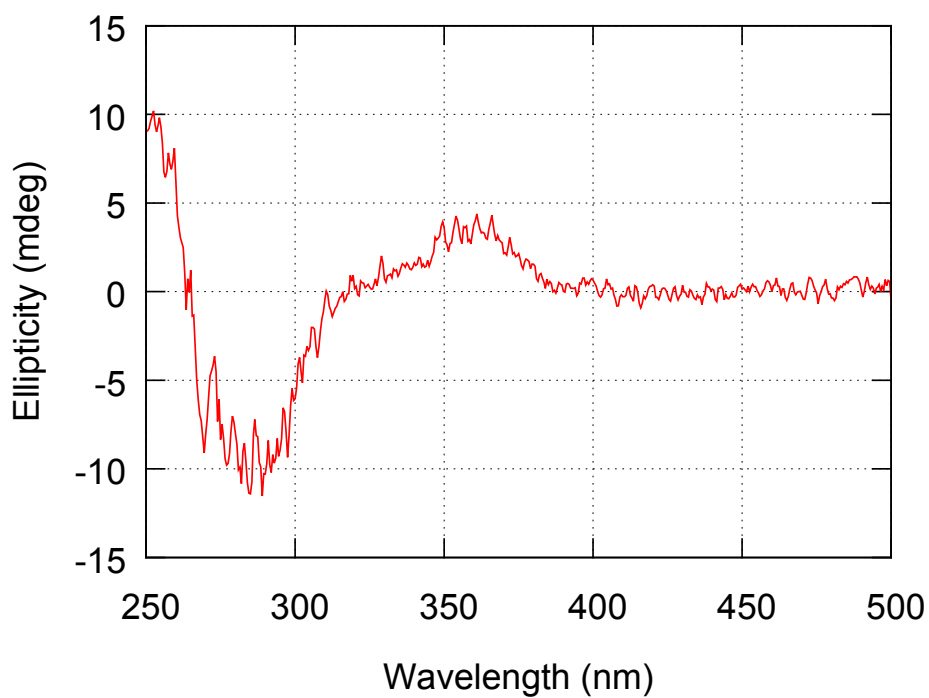


Figure S151. CD spectrum of **3b(7.5/92.5)** in *n*-octane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

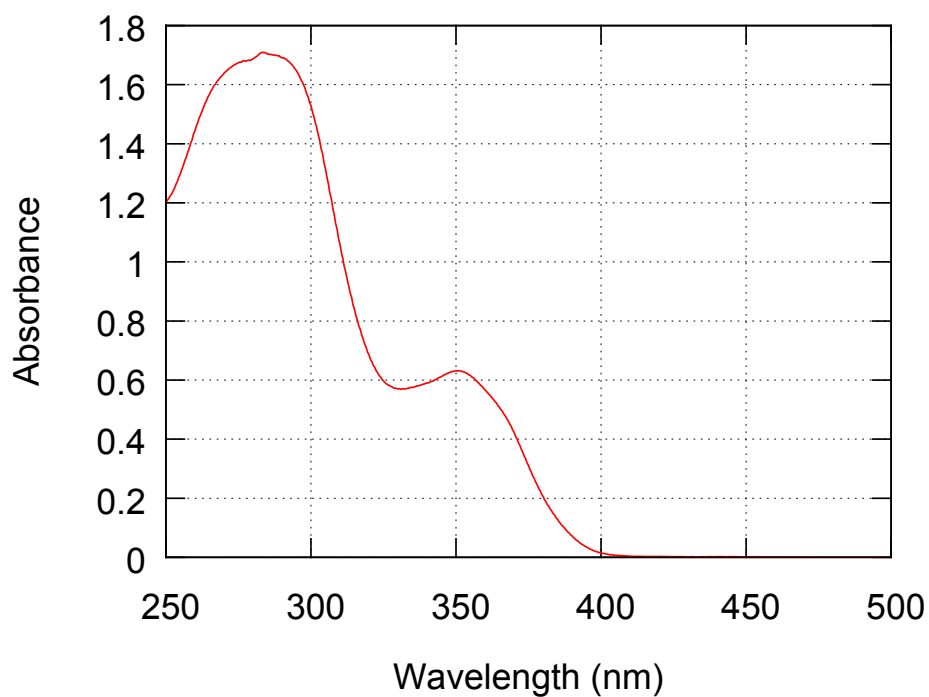


Figure S152. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-nonane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

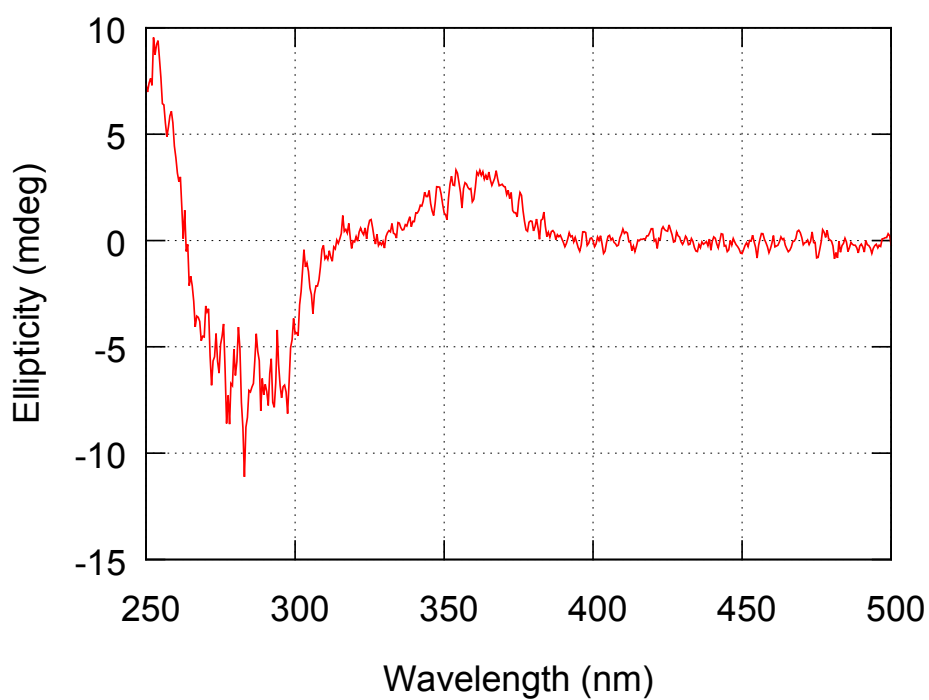


Figure S153. CD spectrum of **3b(7.5/92.5)** in *n*-nonane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

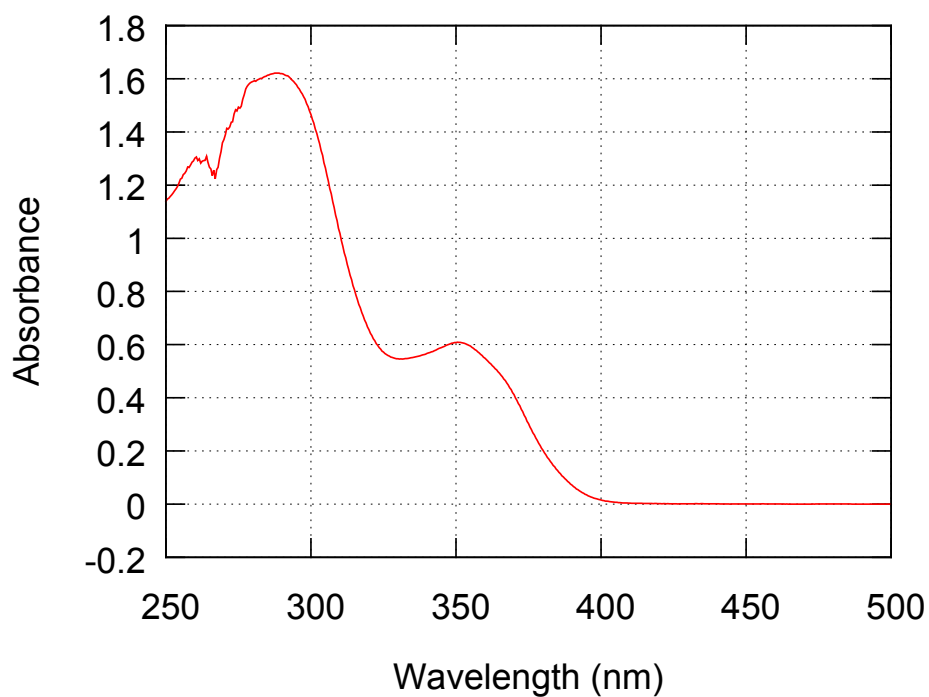


Figure S154. UV-vis absorption spectrum of **3b(7.5/92.5)** in *n*-decane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

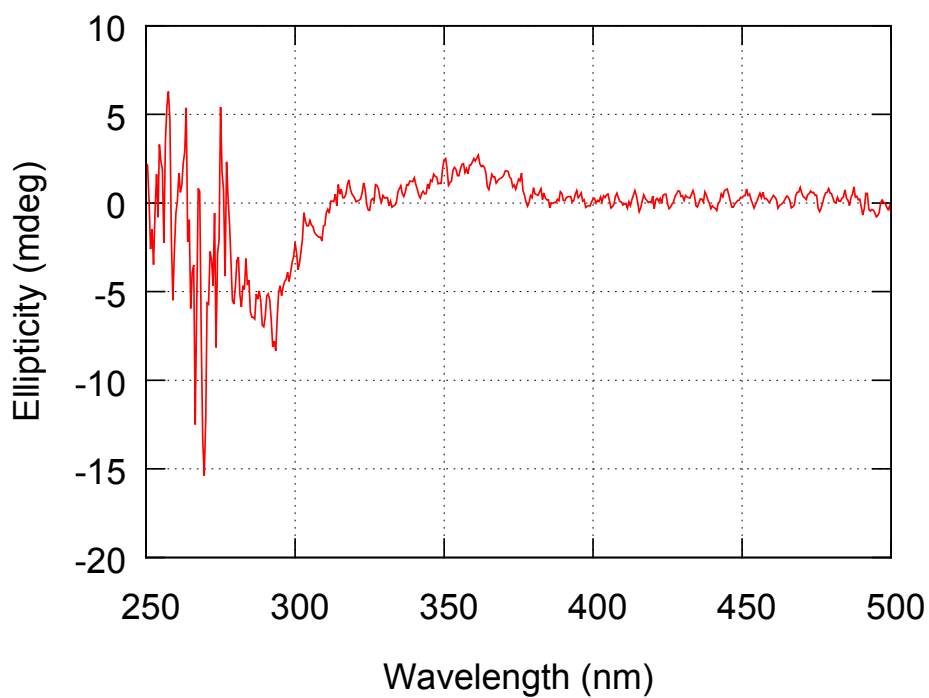


Figure S155. CD spectrum of **3b(7.5/92.5)** in *n*-decane ( $2.25 \times 10^{-2}$  g/L, path length = 10 mm).

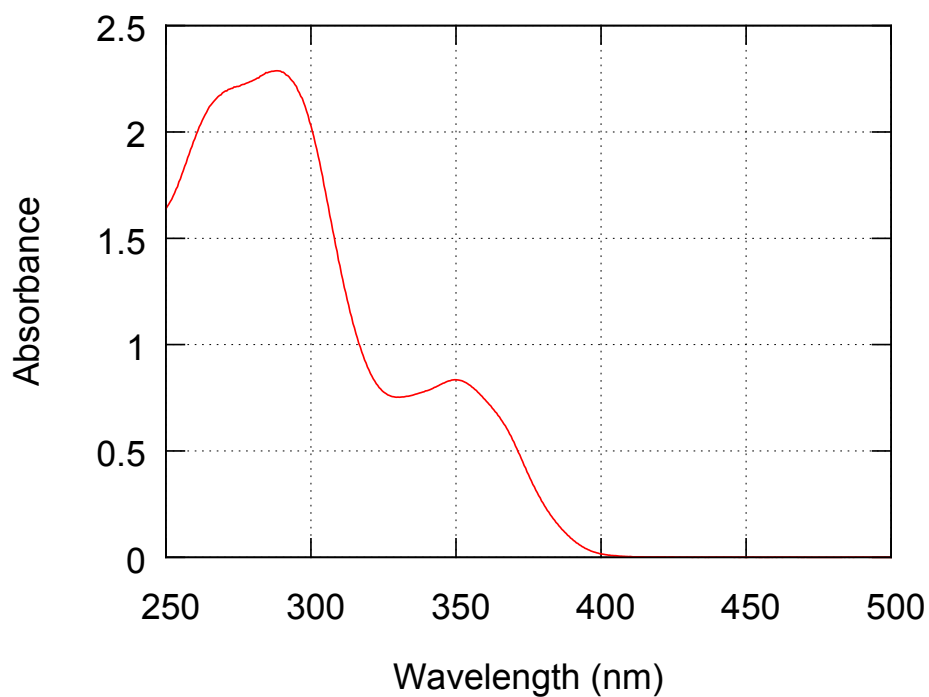


Figure S156. UV-vis absorption spectrum of **3b(10/90)** in *n*-pentane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

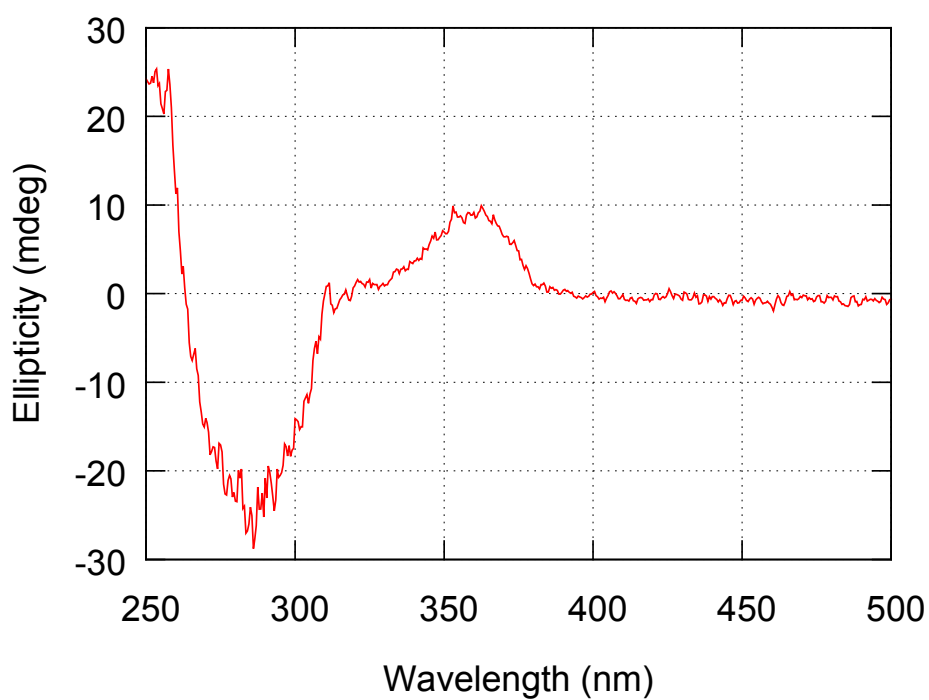


Figure S157. CD spectrum of **3b(10/90)** in *n*-pentane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

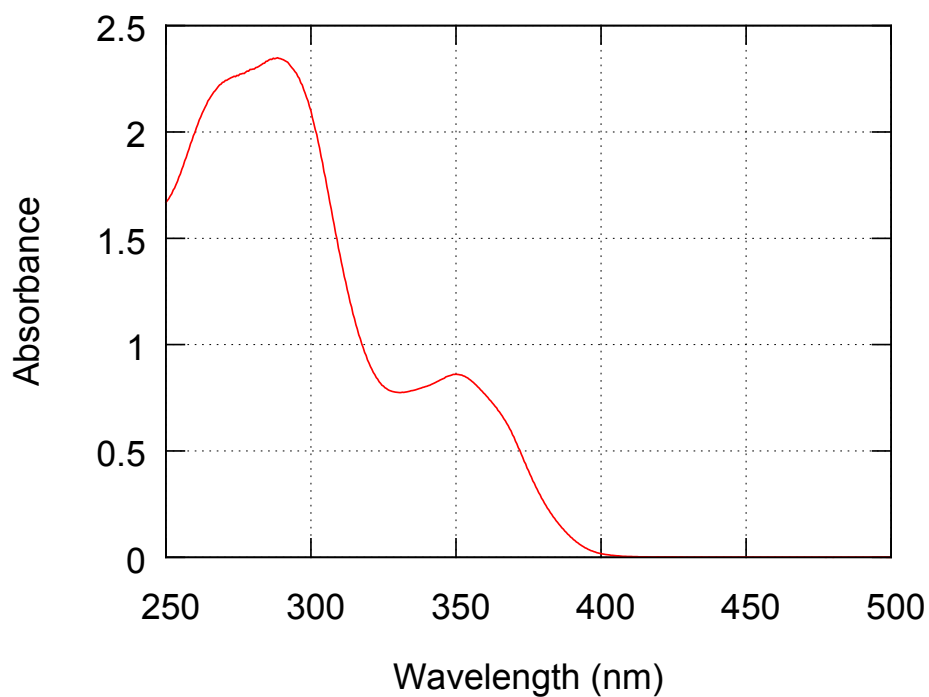


Figure S158. UV-vis absorption spectrum of **3b(10/90)** in *n*-hexane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

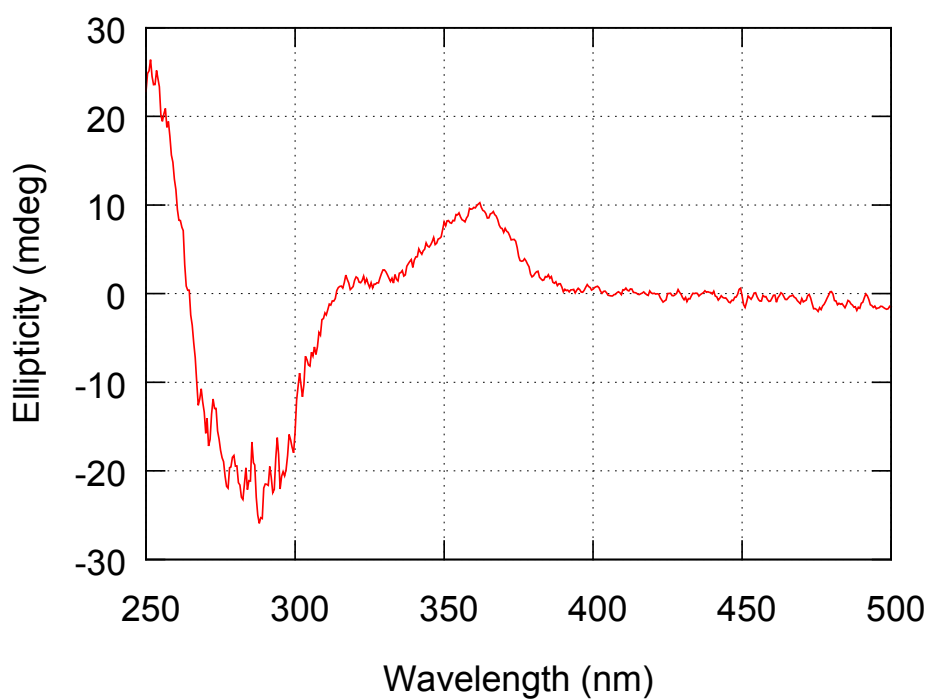


Figure S159. CD spectrum of **3b(10/90)** in *n*-hexane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

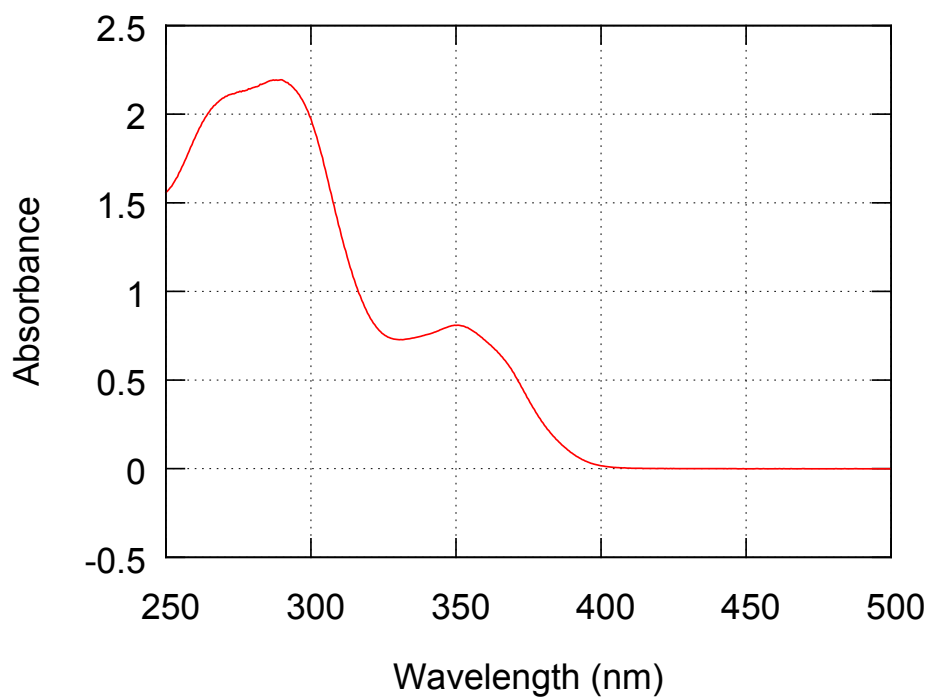


Figure S160. UV-vis absorption spectrum of **3b(10/90)** in *n*-heptane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

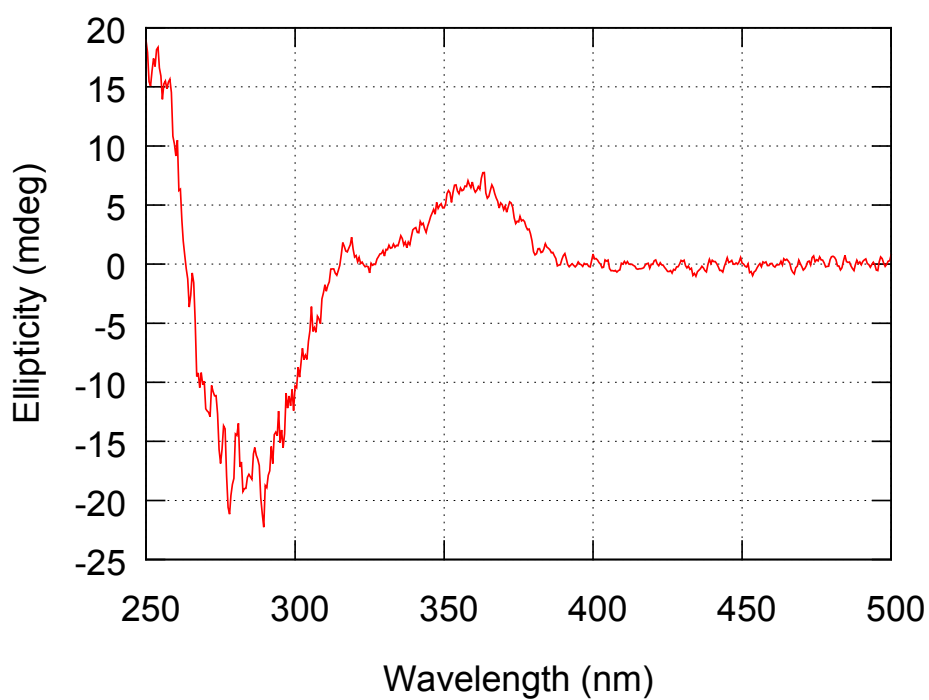


Figure S161. CD spectrum of **3b(10/90)** in *n*-heptane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

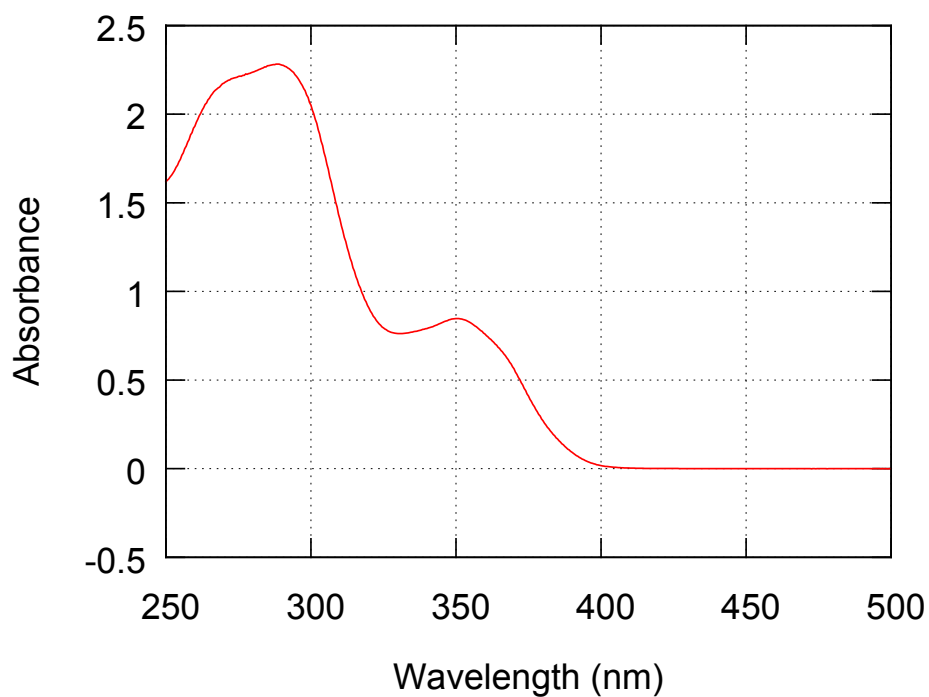


Figure S162. UV-vis absorption spectrum of **3b(10/90)** in *n*-octane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

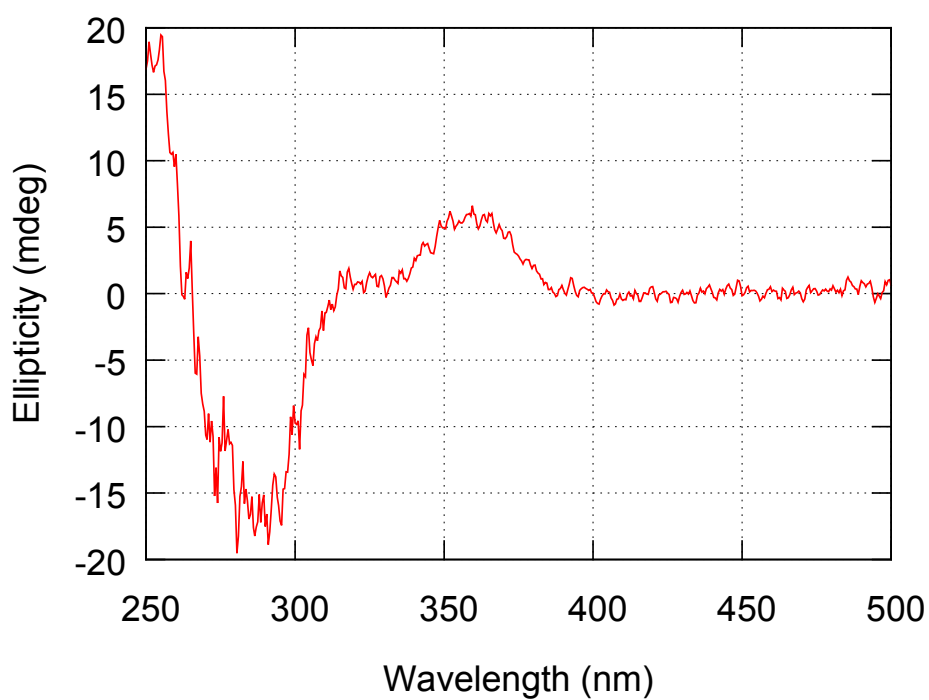


Figure S163. CD spectrum of **3b(10/90)** in *n*-octane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

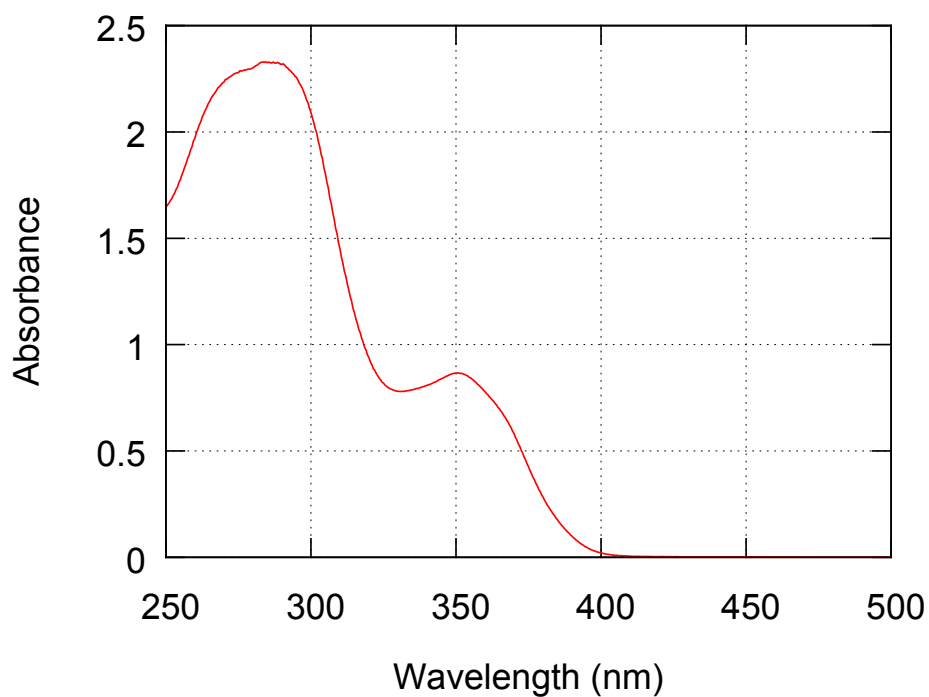


Figure S164. UV-vis absorption spectrum of **3b(10/90)** in *n*-nonane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

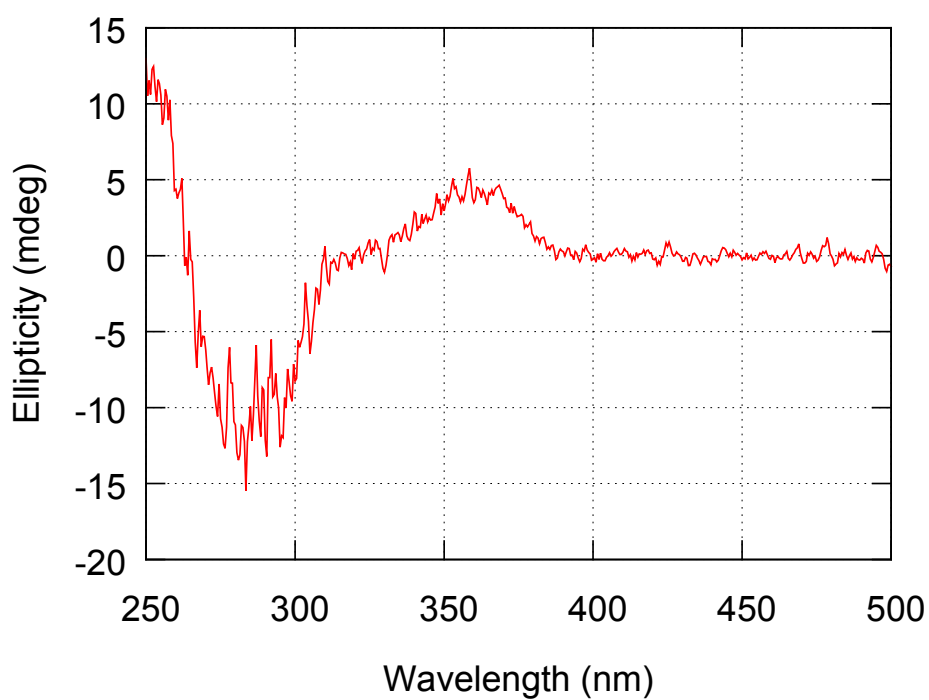


Figure S165. CD spectrum of **3b(10/90)** in *n*-nonane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

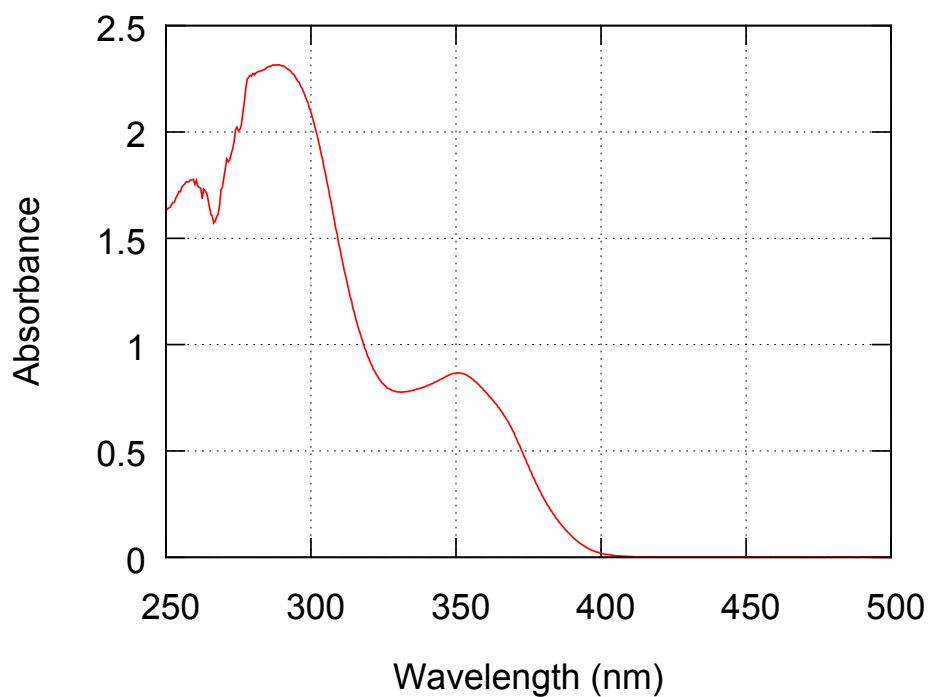


Figure S166. UV-vis absorption spectrum of **3b(10/90)** in *n*-decane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

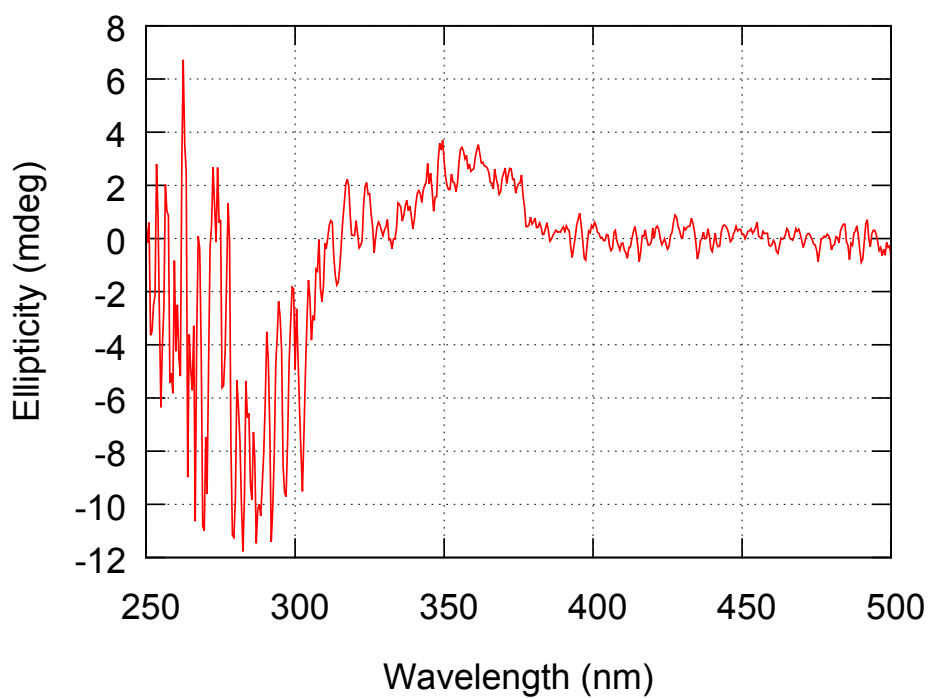


Figure S167. CD spectrum of **3b(10/90)** in *n*-decane ( $3.28 \times 10^{-2}$  g/L, path length = 10 mm).

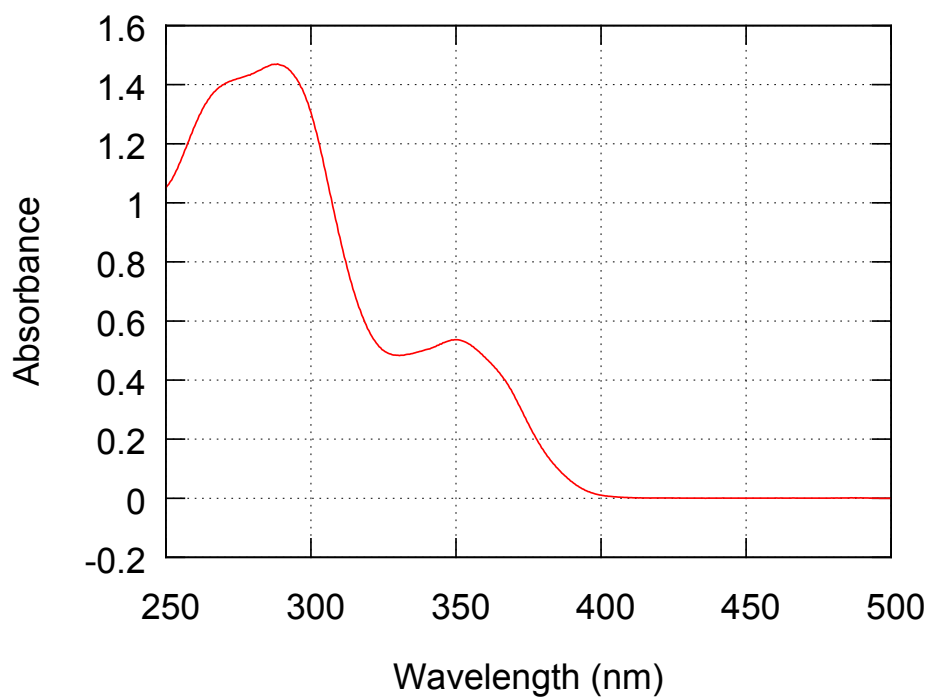


Figure S168. UV-vis absorption spectrum of **3b(15/85)** in *n*-pentane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

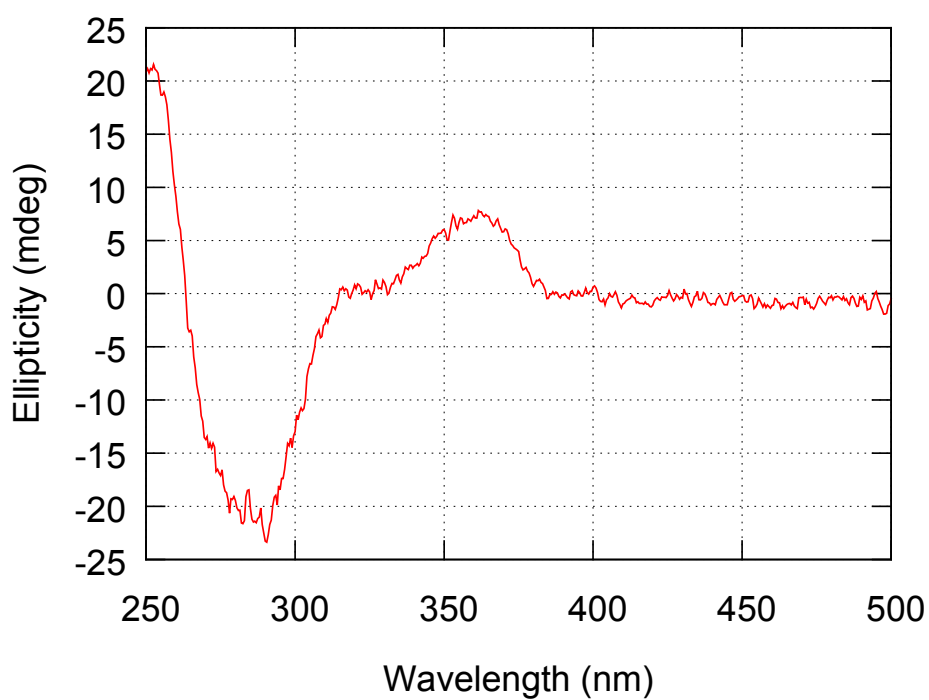


Figure S169. CD spectrum of **3b(15/85)** in *n*-pentane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

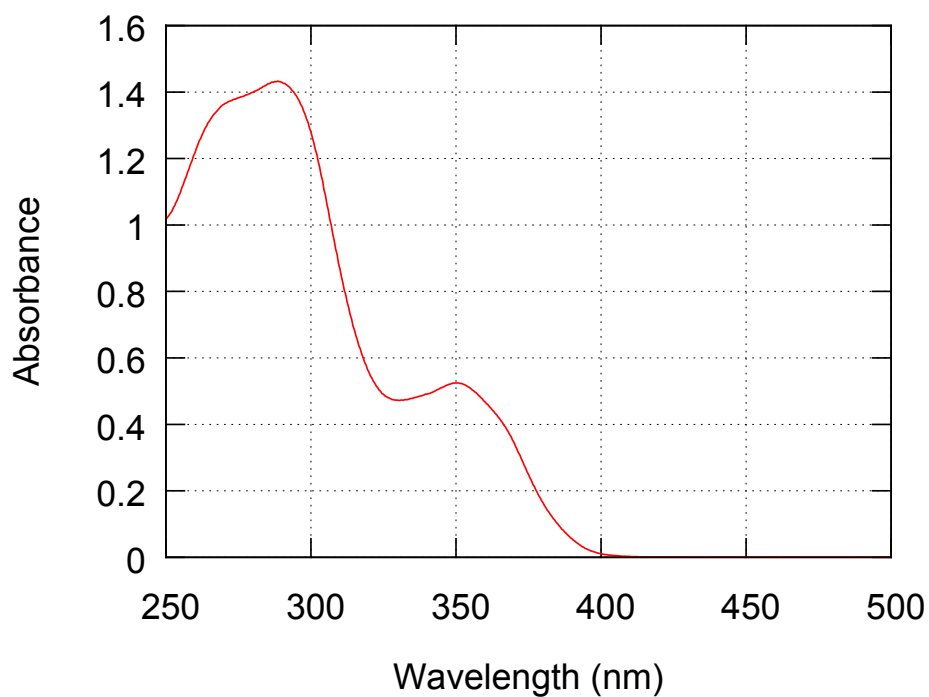


Figure S170. UV-vis absorption spectrum of **3b(15/85)** in *n*-hexane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

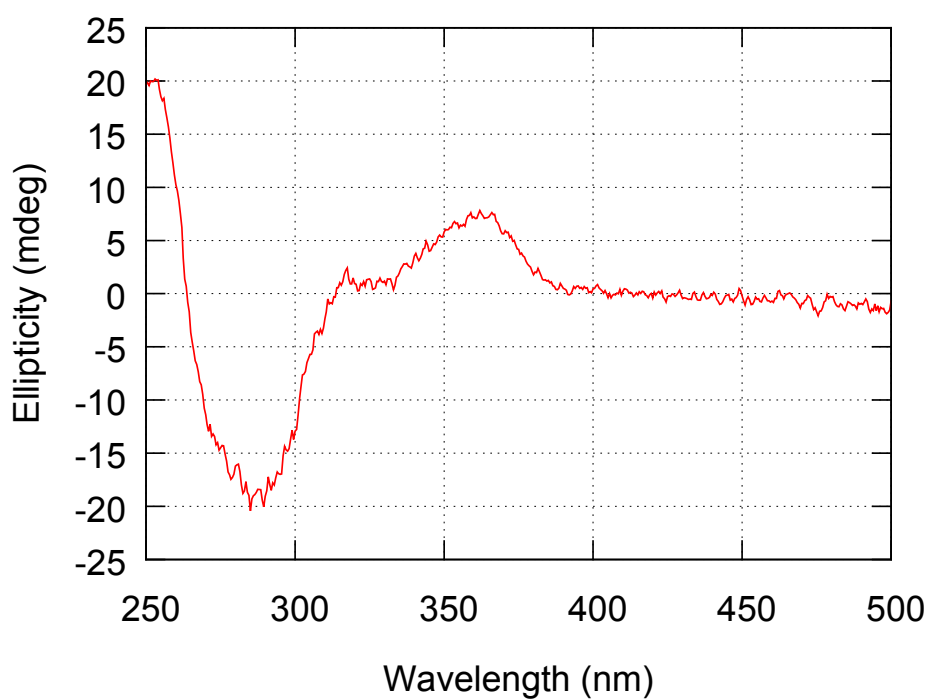


Figure S171. CD spectrum of **3b(15/85)** in *n*-hexane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

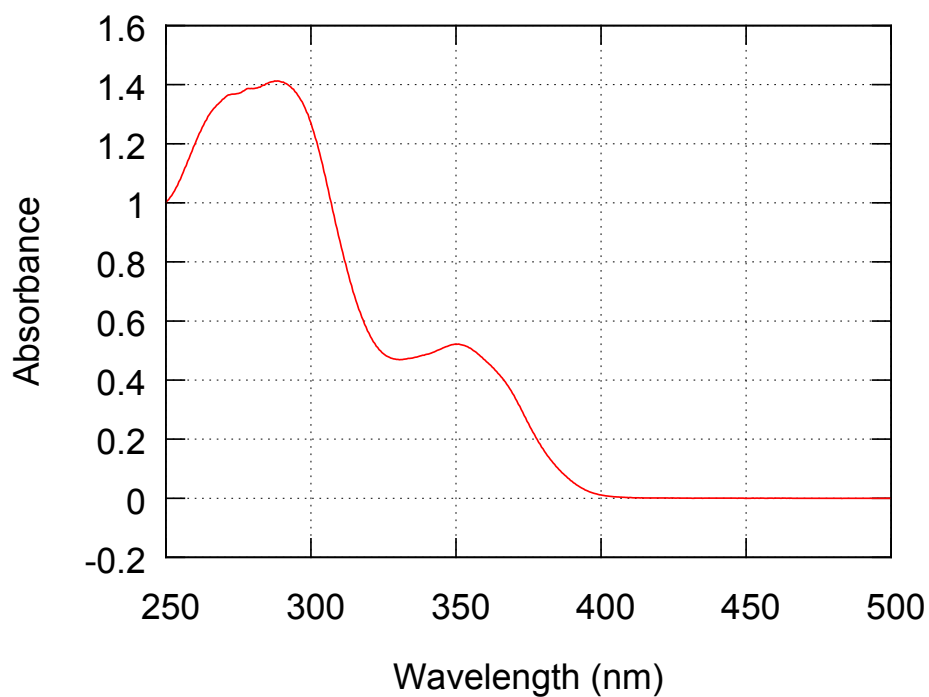


Figure S172. UV-vis absorption spectrum of **3b(15/85)** in *n*-heptane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

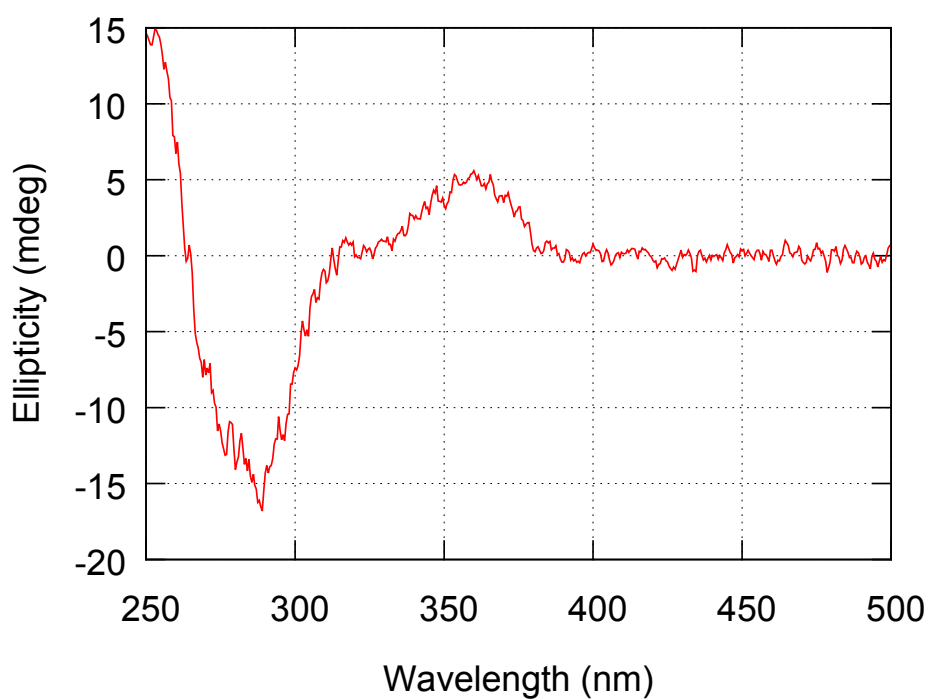


Figure S173. CD spectrum of **3b(15/85)** in *n*-heptane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

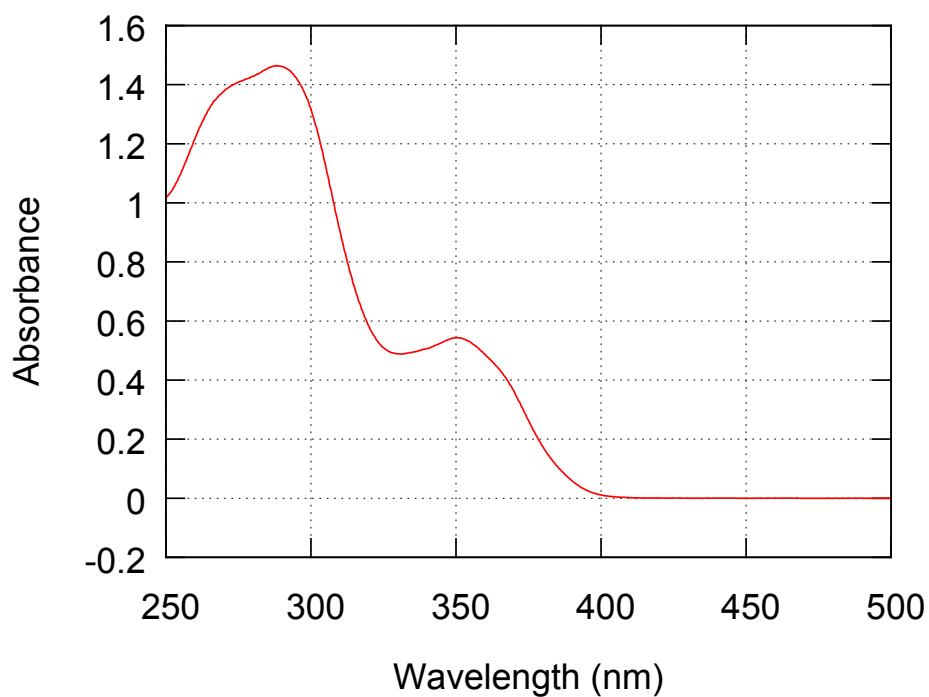


Figure S174. UV-vis absorption spectrum of **3b(15/85)** in *n*-octane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

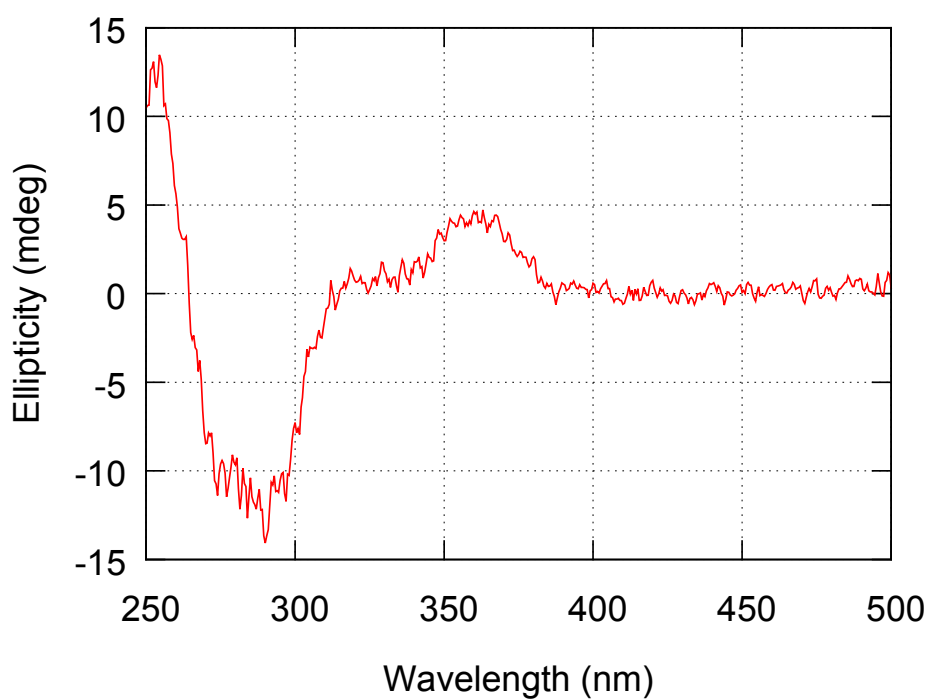


Figure S175. CD spectrum of **3b(15/85)** in *n*-octane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

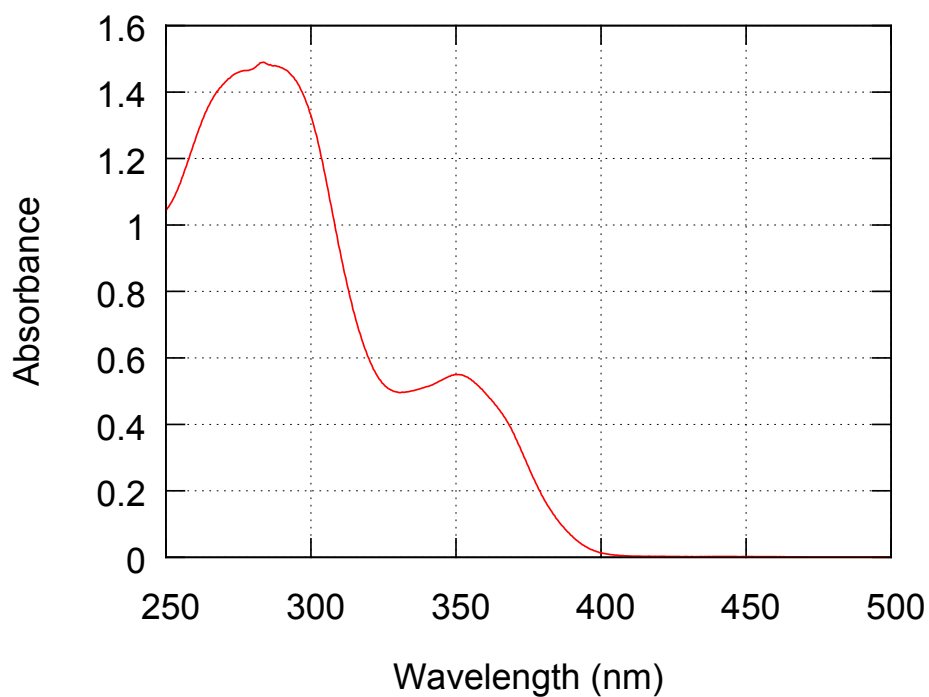


Figure S176. UV-vis absorption spectrum of **3b(15/85)** in *n*-nonane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

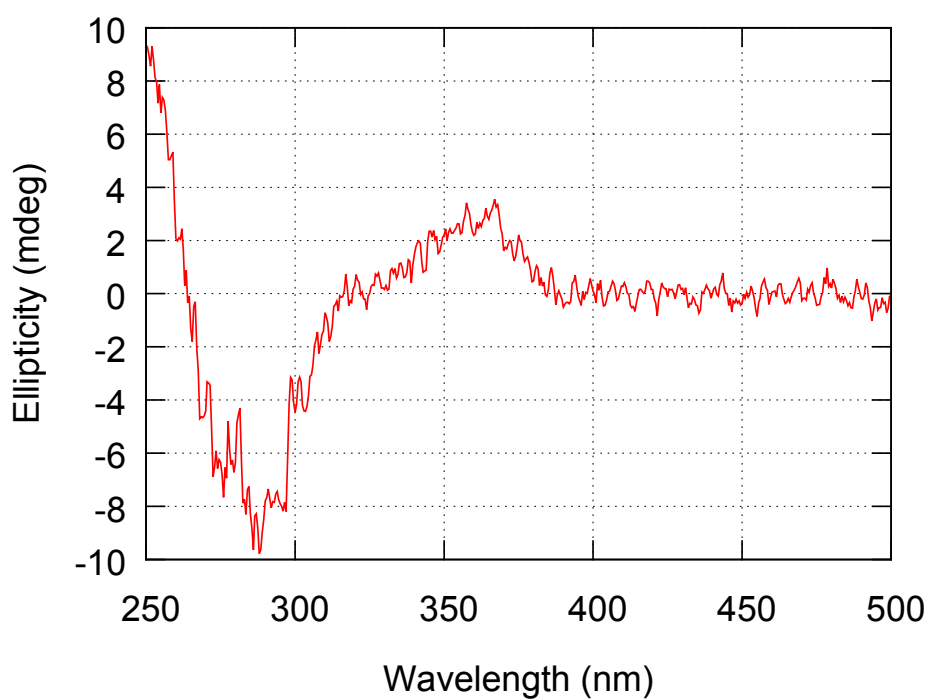


Figure S177. CD spectrum of **3b(15/85)** in *n*-nonane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

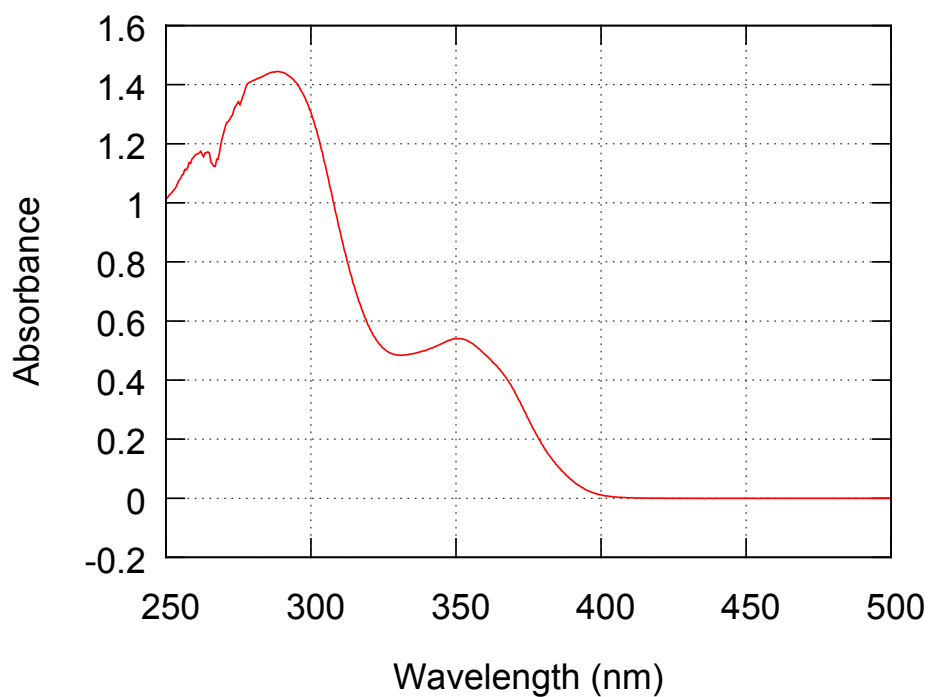


Figure S178. UV-vis absorption spectrum of **3b(15/85)** in *n*-decane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

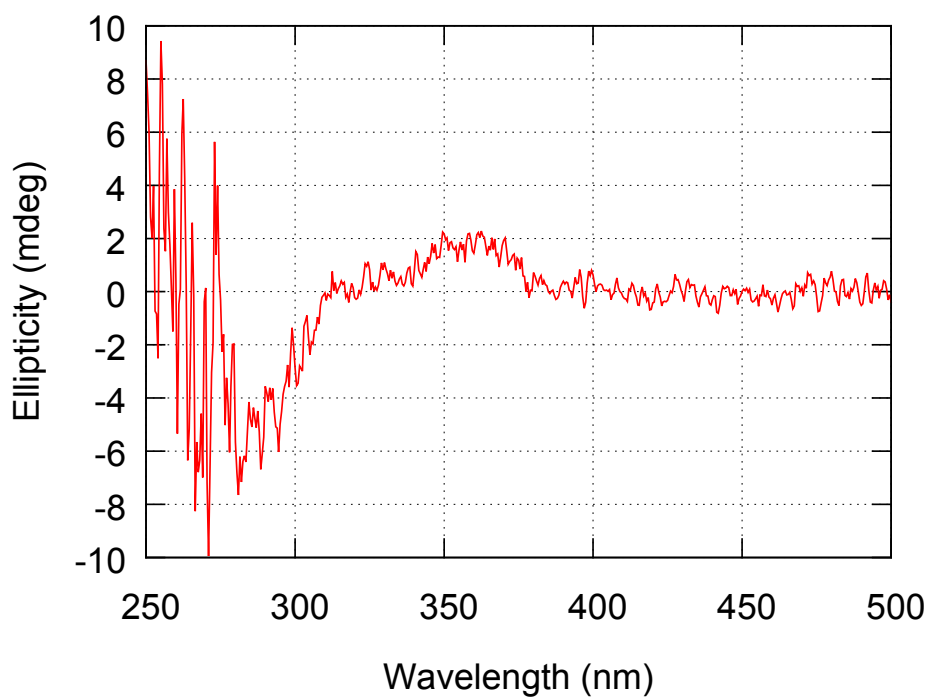


Figure S179. CD spectrum of **3b(15/85)** in *n*-decane ( $2.09 \times 10^{-2}$  g/L, path length = 10 mm).

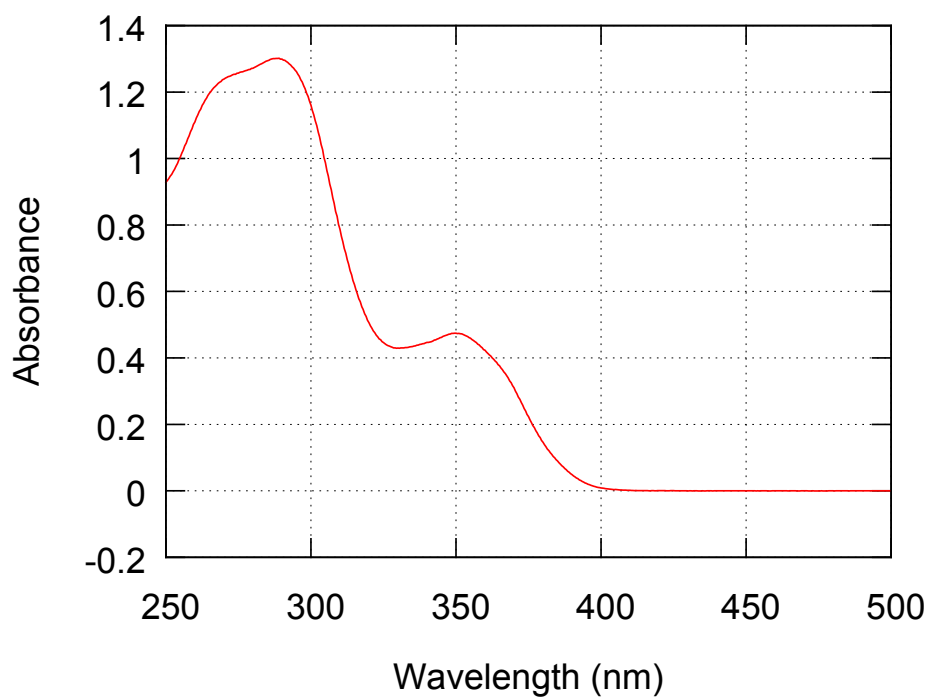


Figure S180. UV-vis absorption spectrum of **3b(20/80)** in *n*-pentane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

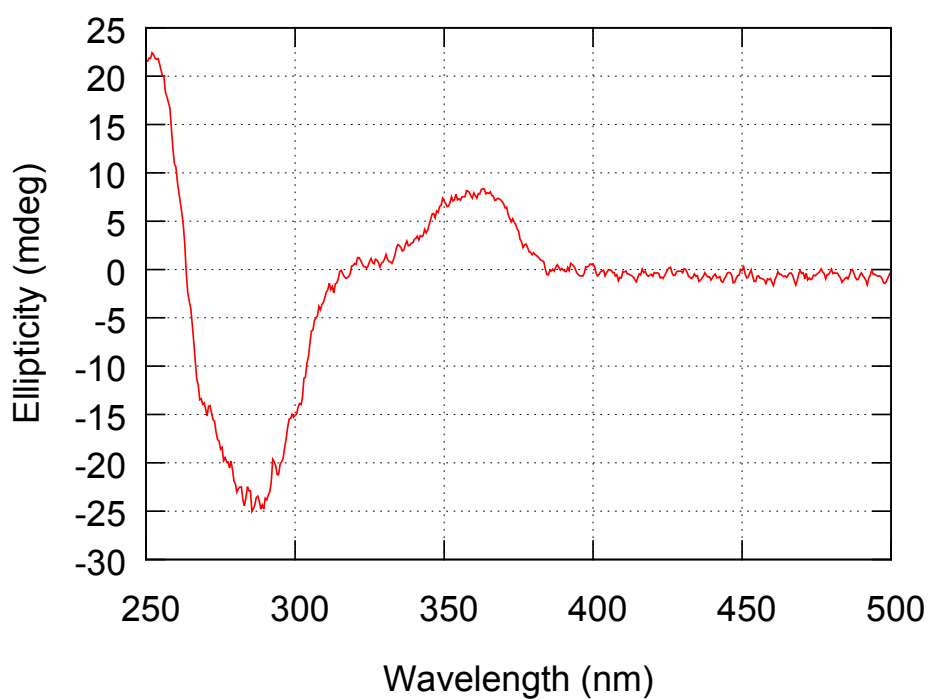


Figure S181. CD spectrum of **3b(20/80)** in *n*-pentane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

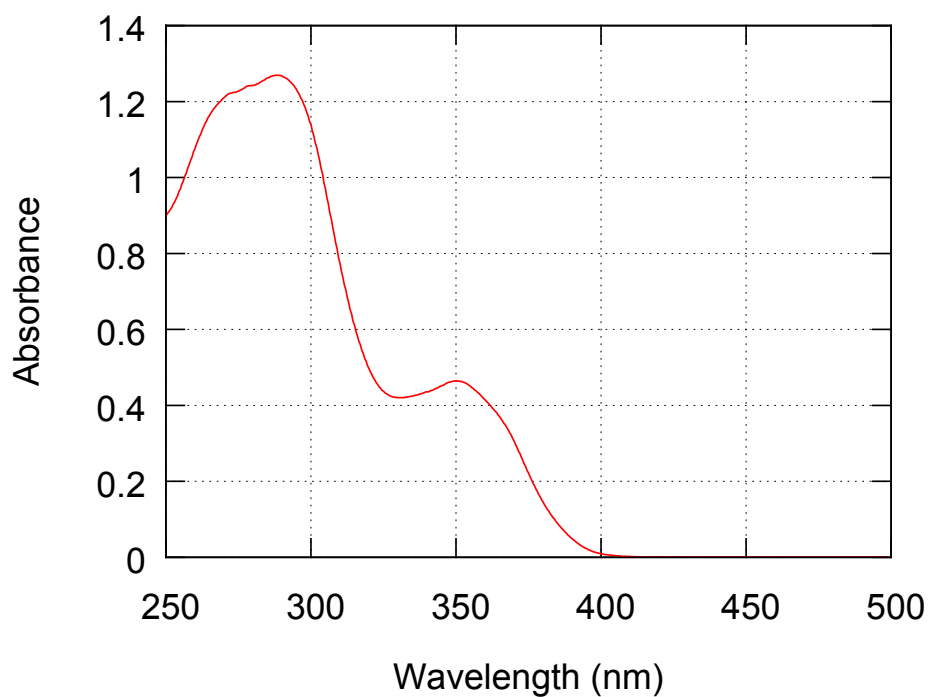


Figure S182. UV-vis absorption spectrum of **3b(20/80)** in *n*-hexane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

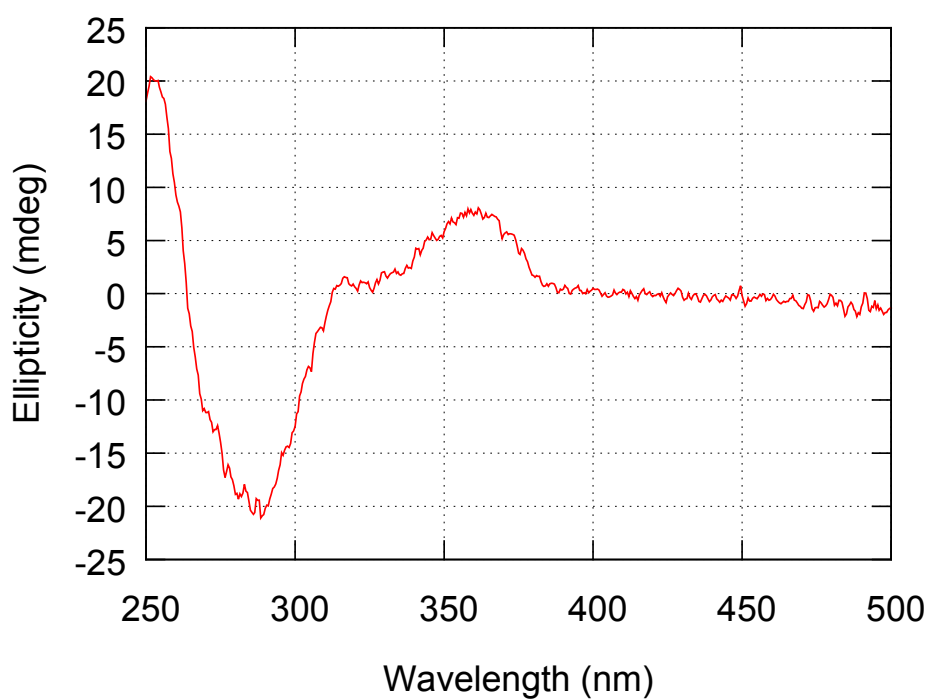


Figure S183. CD spectrum of **3b(20/80)** in *n*-hexane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

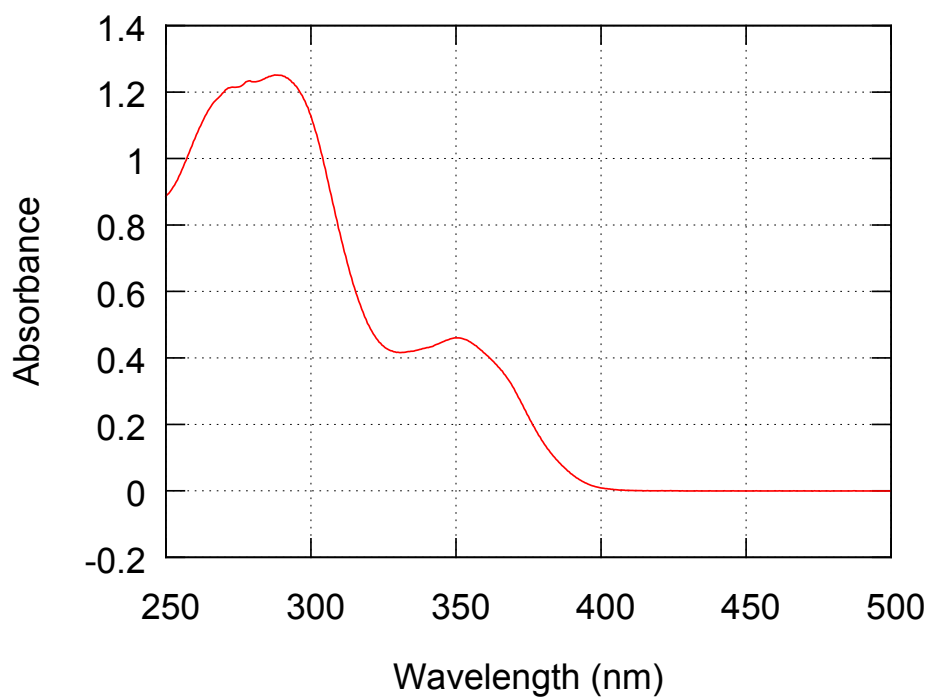


Figure S184. UV-vis absorption spectrum of **3b(20/80)** in *n*-heptane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

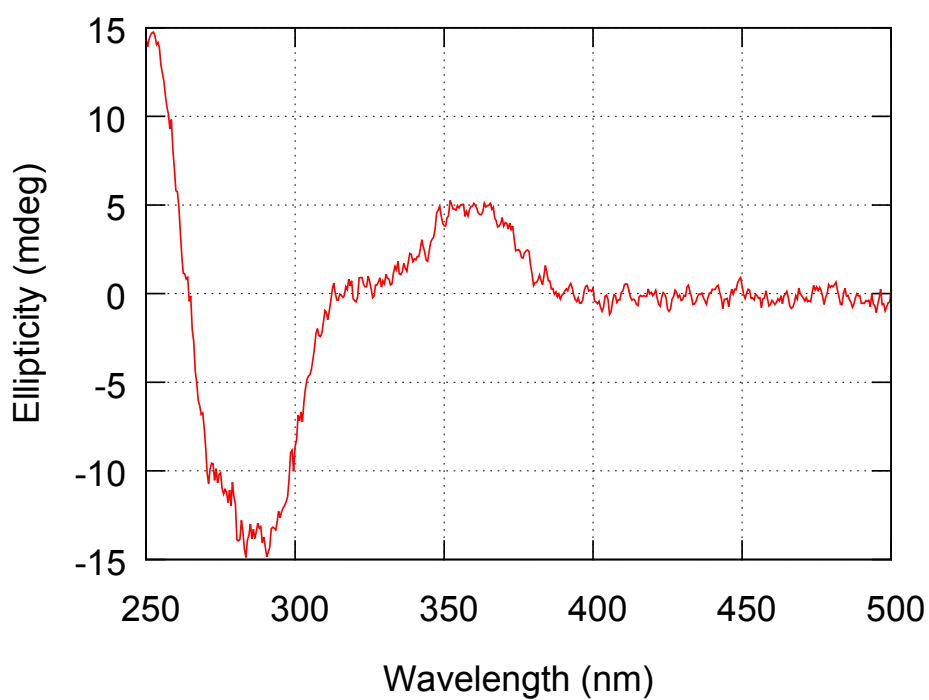


Figure S185. CD spectrum of **3b(20/80)** in *n*-heptane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

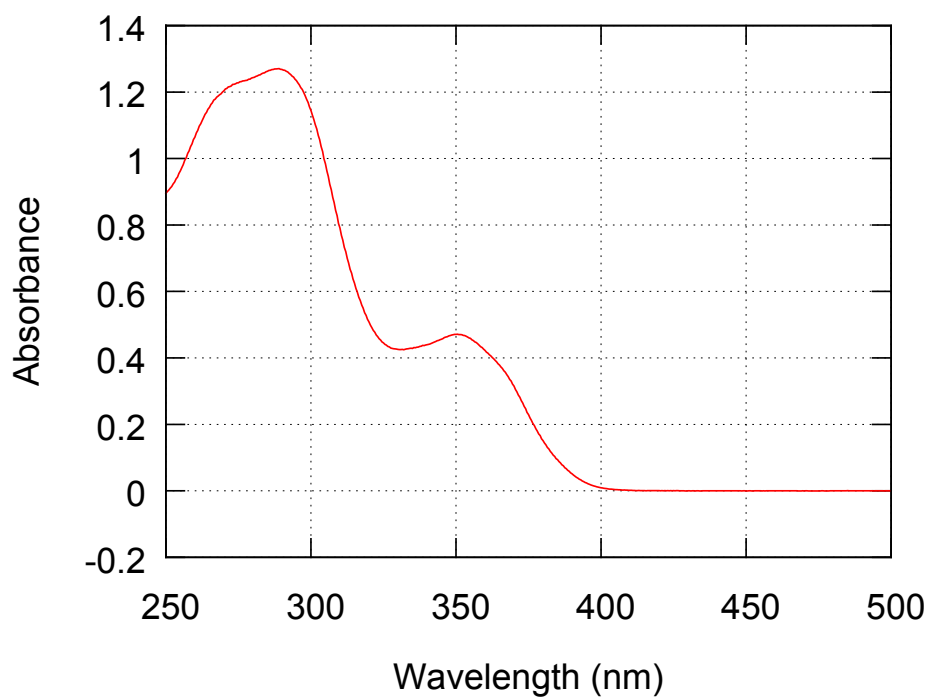


Figure S186. UV-vis absorption spectrum of **3b(20/80)** in *n*-octane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

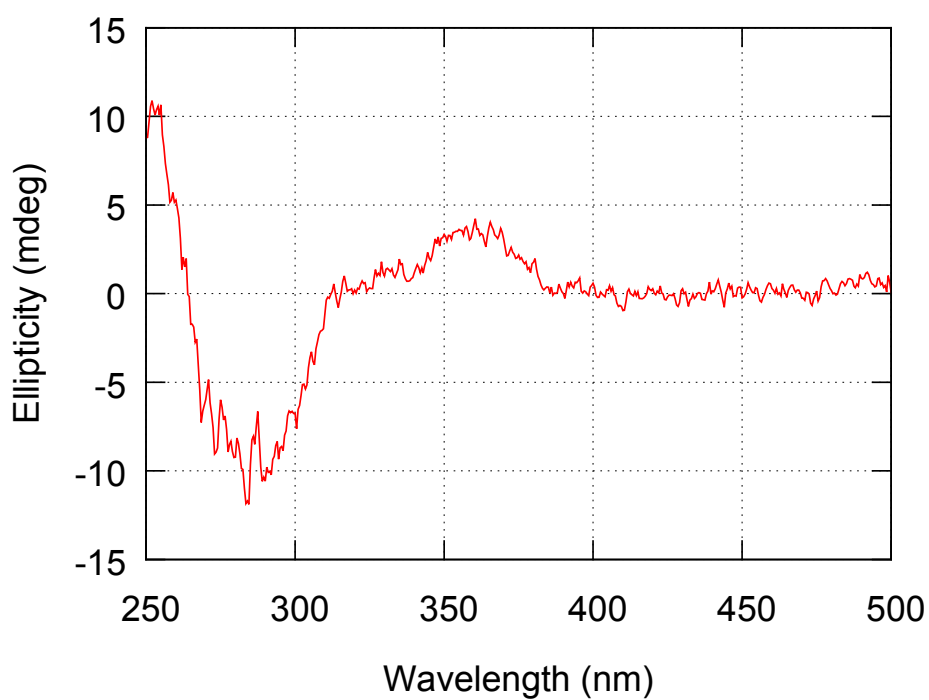


Figure S187. CD spectrum of **3b(20/80)** in *n*-octane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

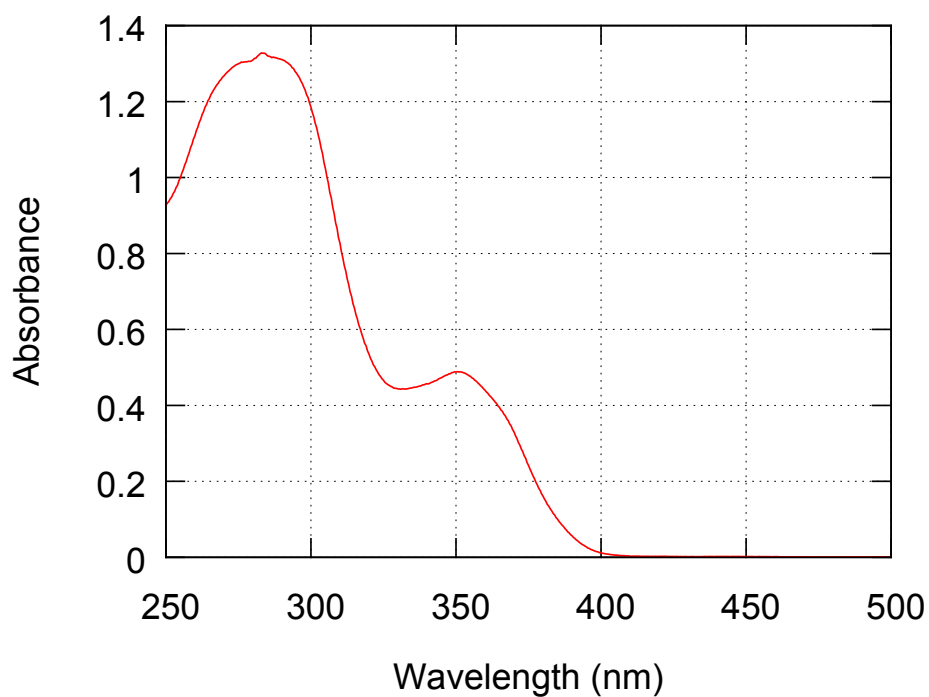


Figure S188. UV-vis absorption spectrum of **3b(20/80)** in *n*-nonane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

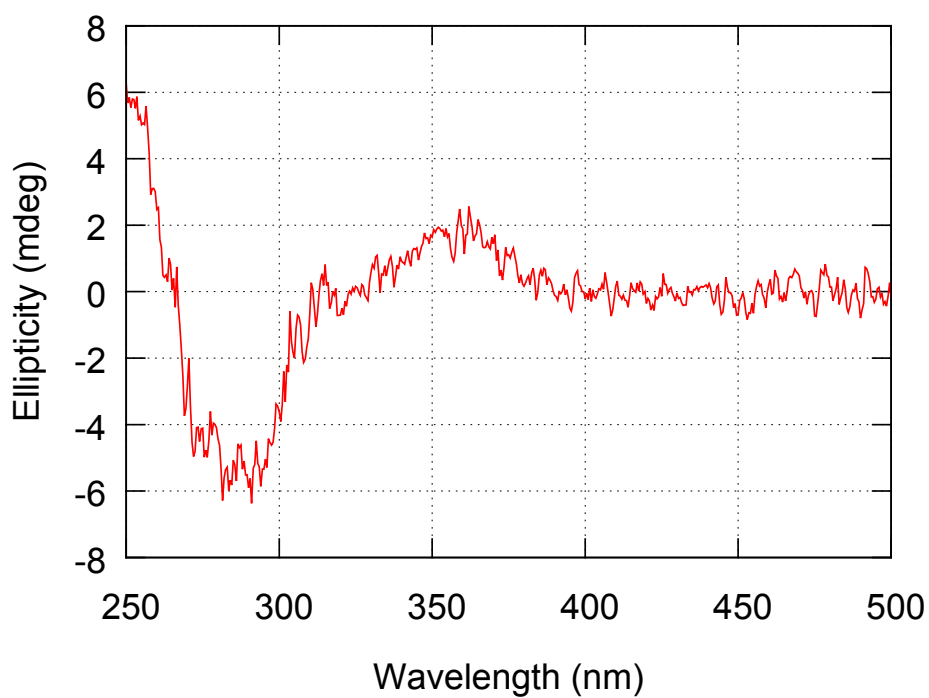


Figure S189. CD spectrum of **3b(20/80)** in *n*-nonane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

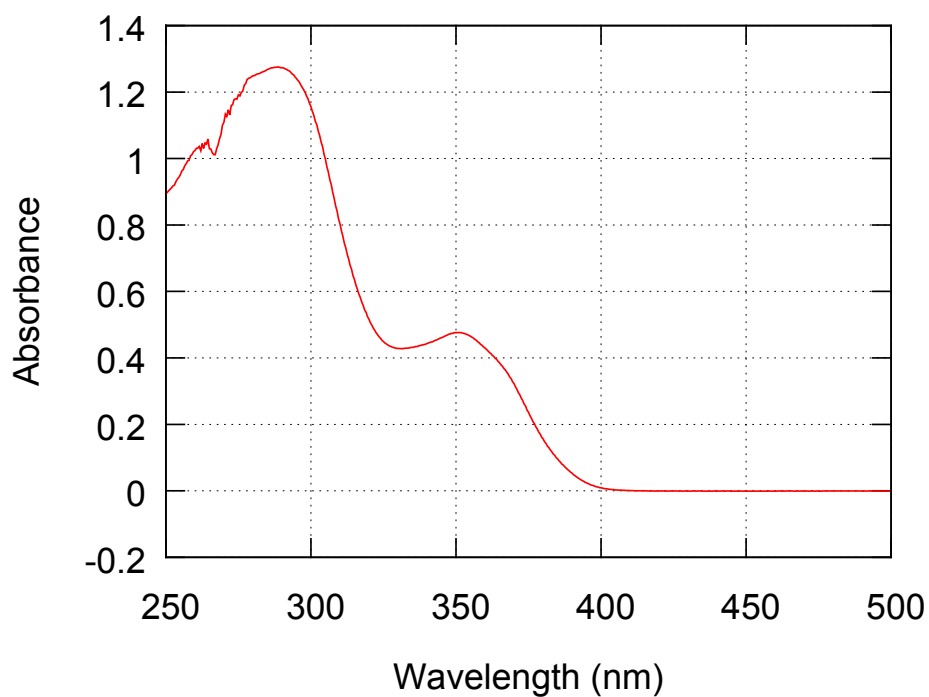


Figure S190. UV-vis absorption spectrum of **3b(20/80)** in *n*-decane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

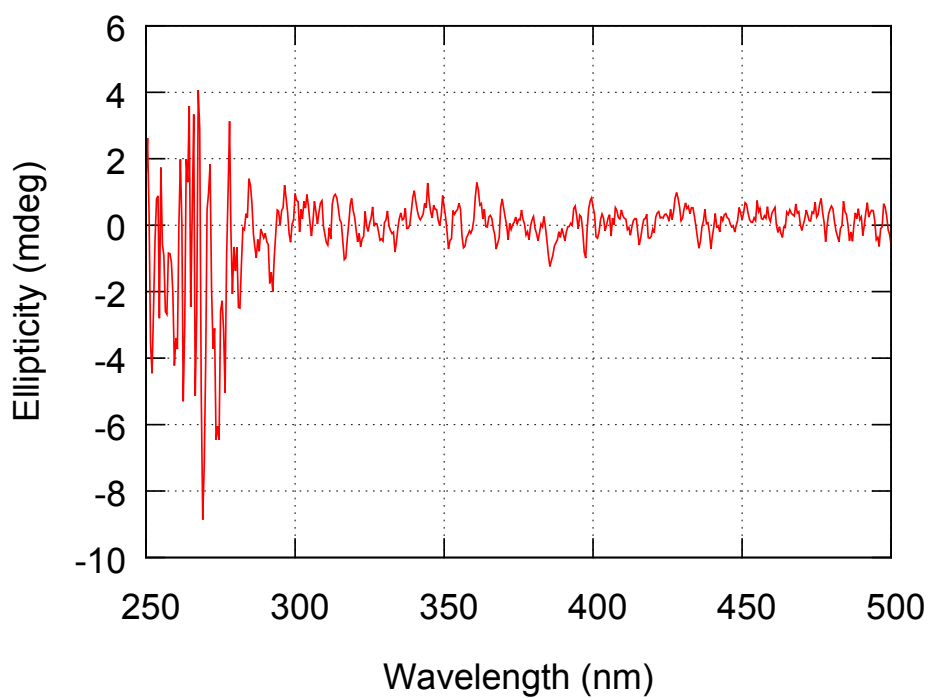


Figure S191. CD spectrum of **3b(20/80)** in *n*-decane ( $1.88 \times 10^{-2}$  g/L, path length = 10 mm).

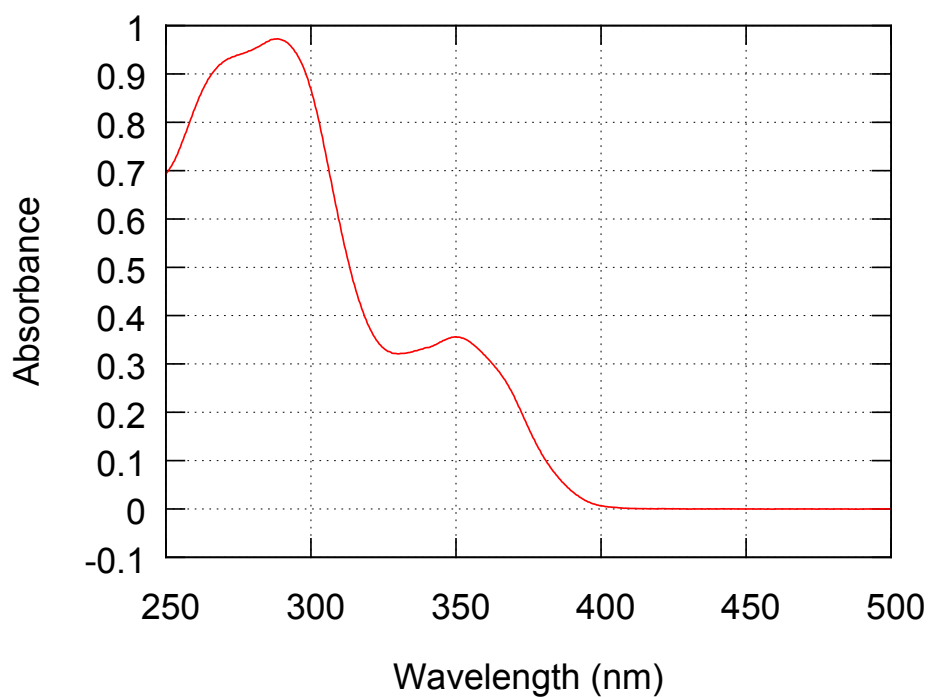


Figure S192. UV-vis absorption spectrum of **3b(30/70)** in *n*-pentane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

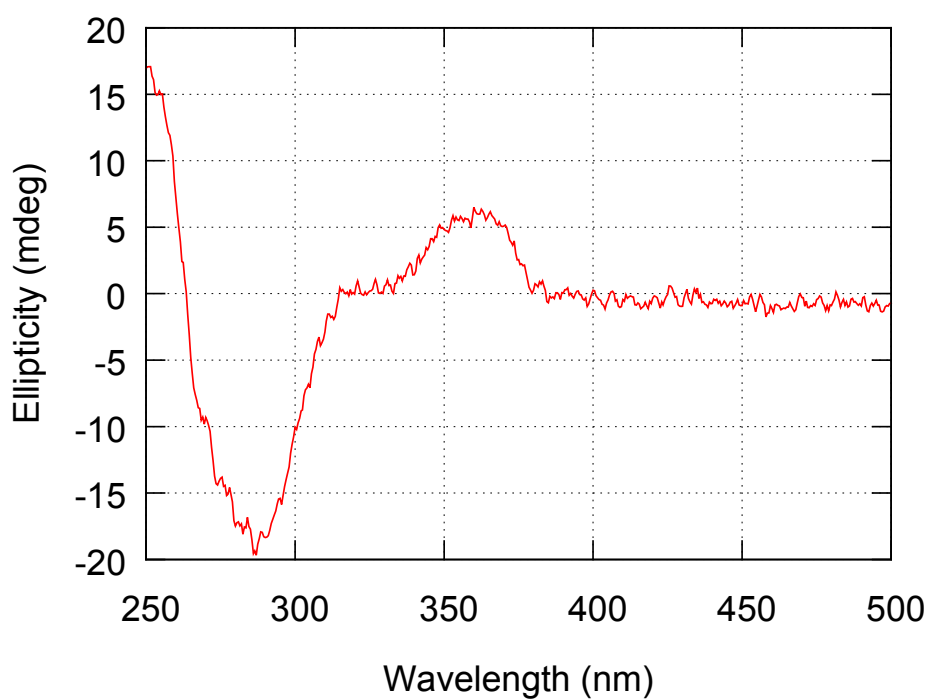


Figure S193. CD spectrum of **3b(30/70)** in *n*-pentane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

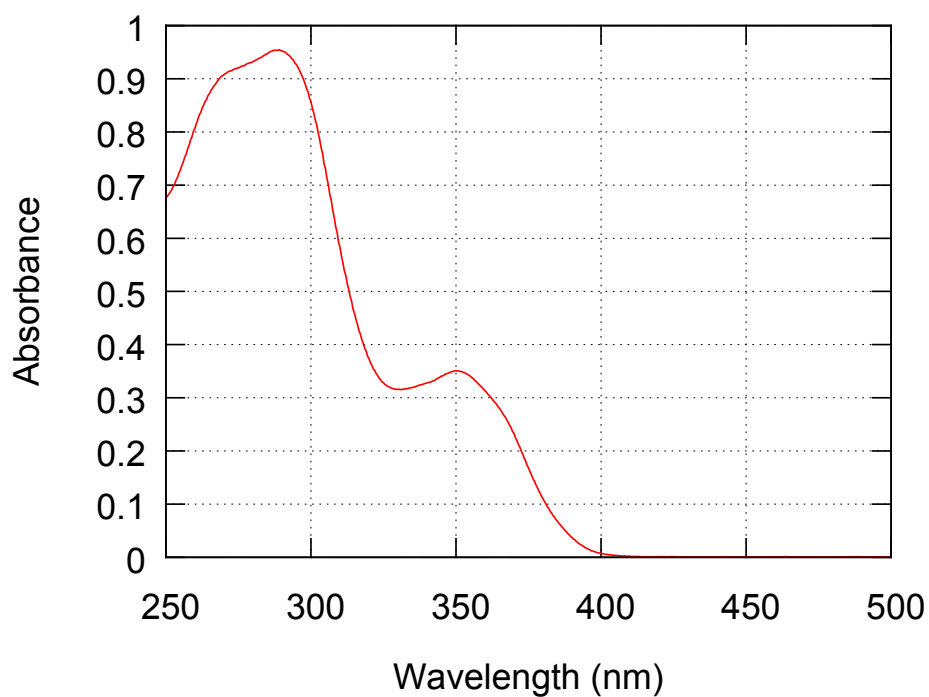


Figure S194. UV-vis absorption spectrum of **3b(30/70)** in *n*-hexane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

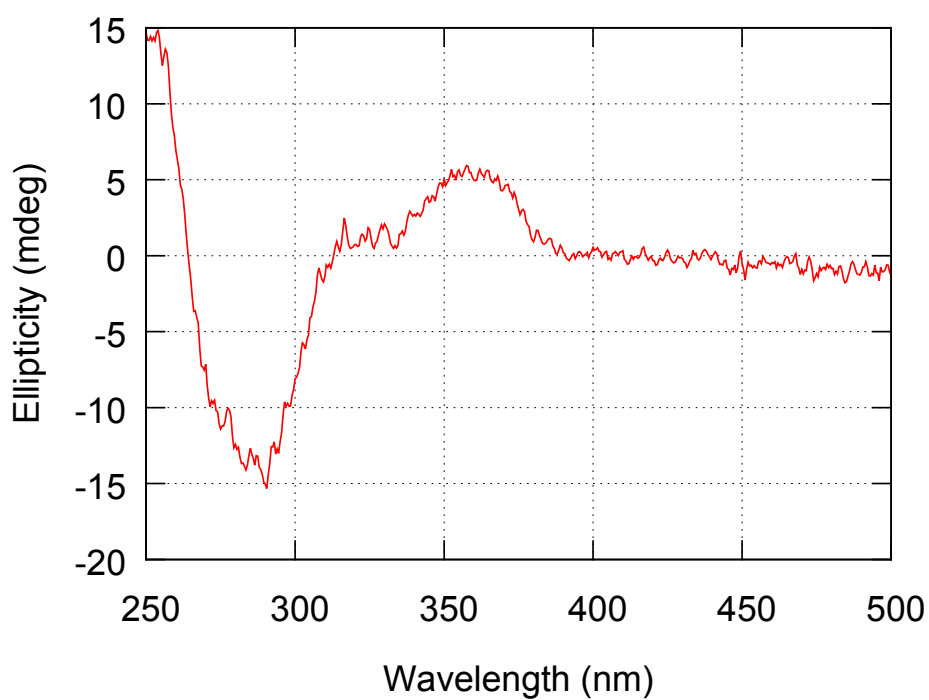


Figure S195. CD spectrum of **3b(30/70)** in *n*-hexane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

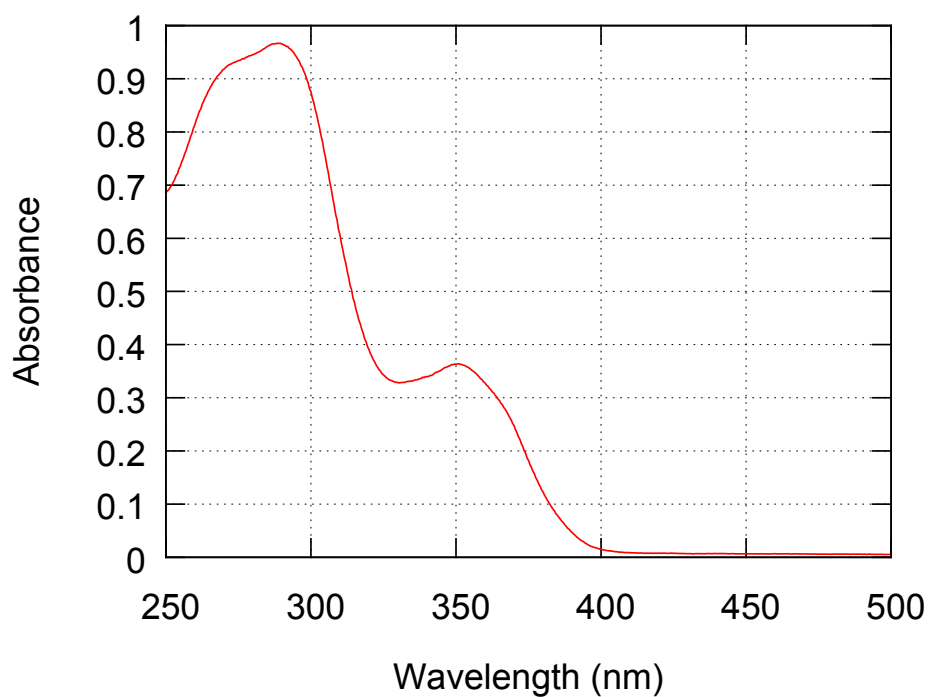


Figure S196. UV-vis absorption spectrum of **3b(30/70)** in *n*-heptane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

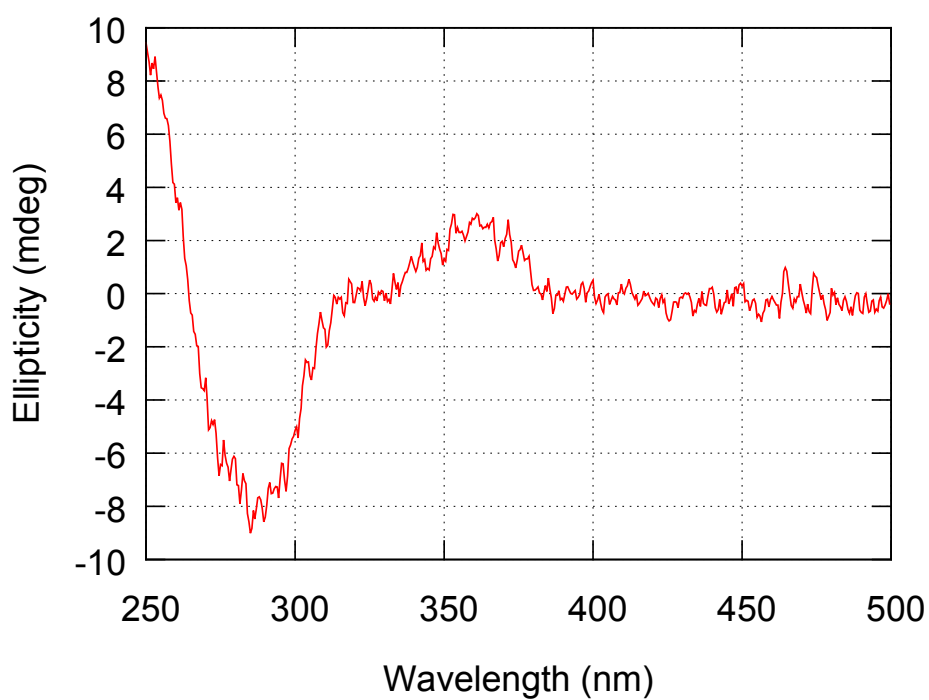


Figure S197. CD spectrum of **3b(30/70)** in *n*-heptane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

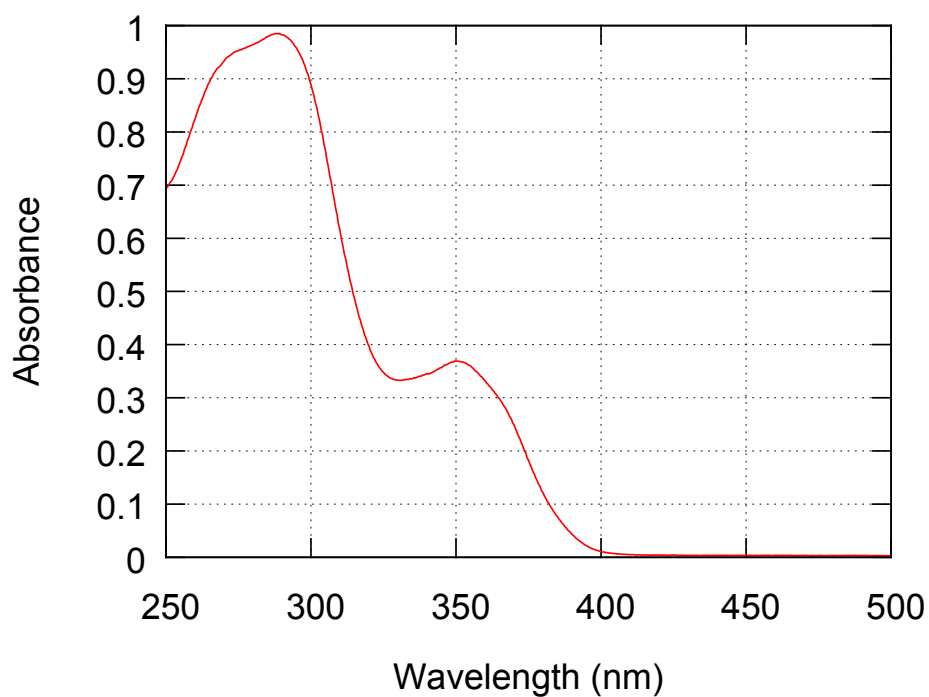


Figure S198. UV-vis absorption spectrum of **3b(30/70)** in *n*-octane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

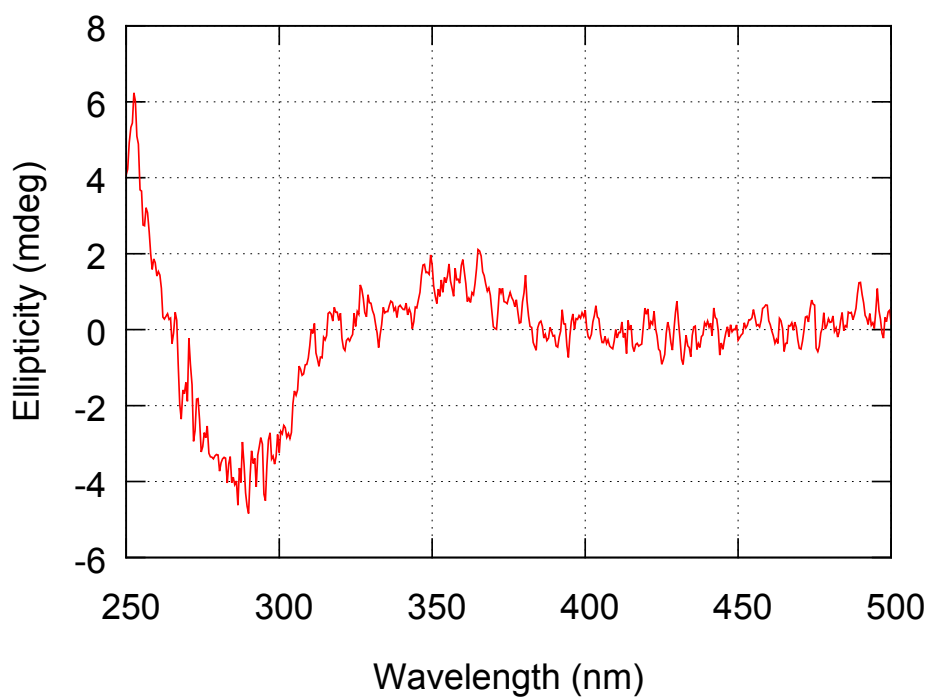


Figure S199. CD spectrum of **3b(30/70)** in *n*-octane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

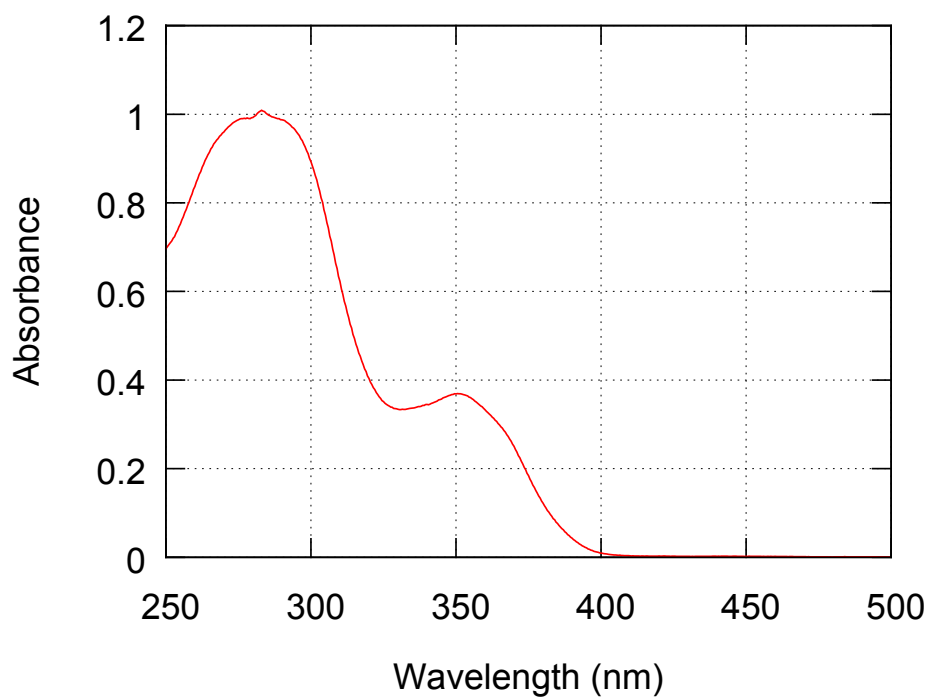


Figure S200. UV-vis absorption spectrum of **3b(30/70)** in *n*-nonane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

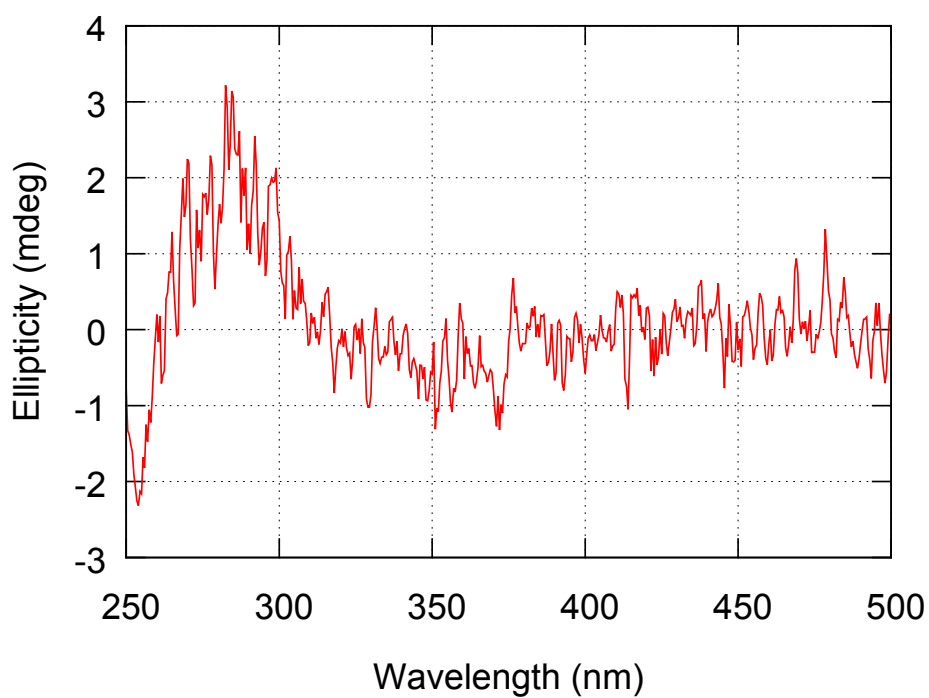


Figure S201. CD spectrum of **3b(30/70)** in *n*-nonane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

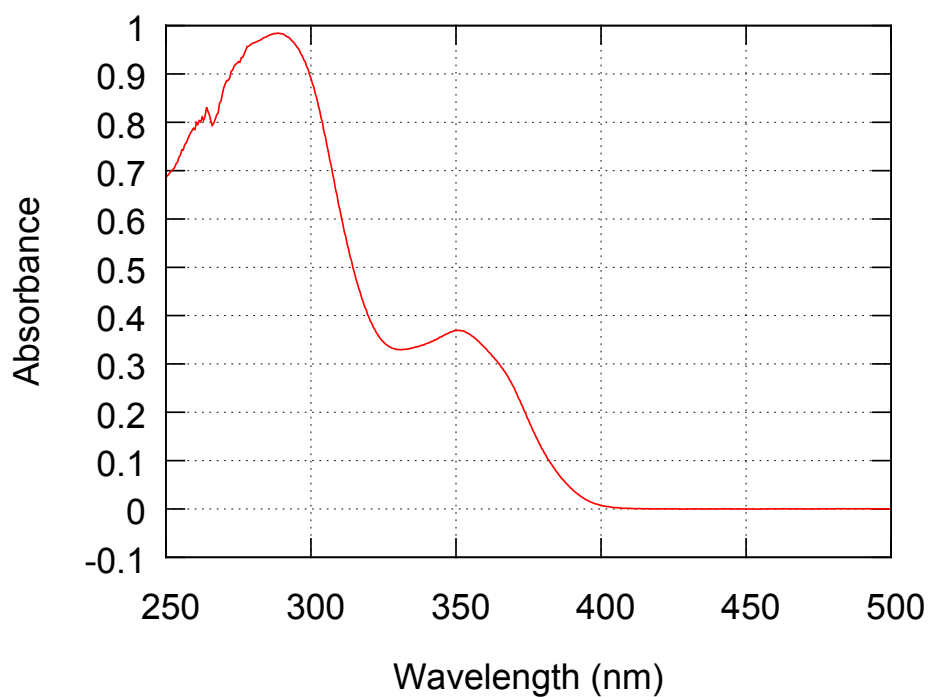


Figure S202. UV-vis absorption spectrum of **3b(30/70)** in *n*-decane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

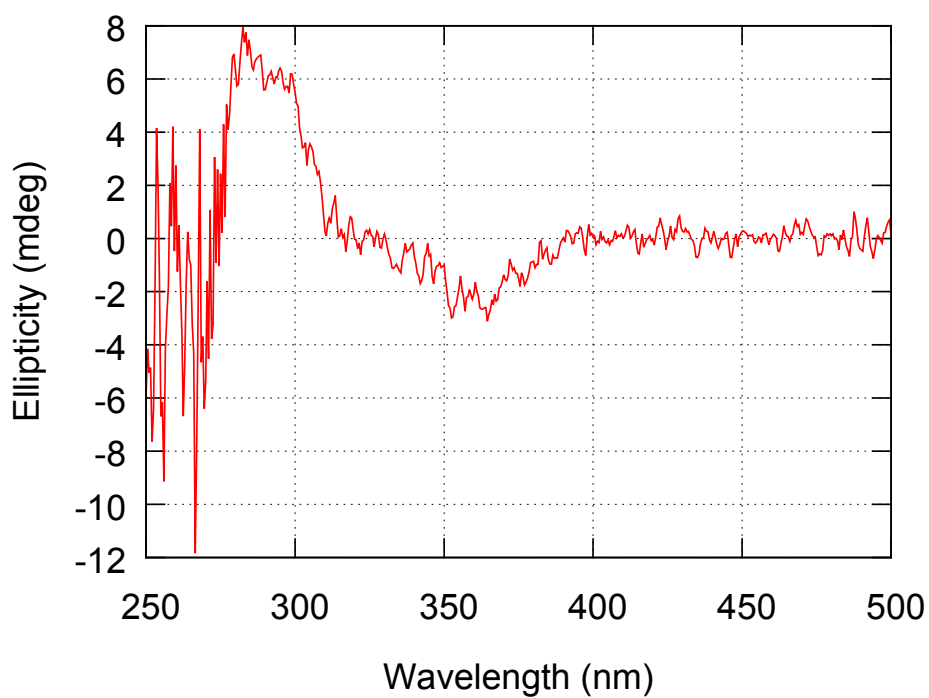


Figure S203. CD spectrum of **3b(30/70)** in *n*-decane ( $1.83 \times 10^{-2}$  g/L, path length = 10 mm).

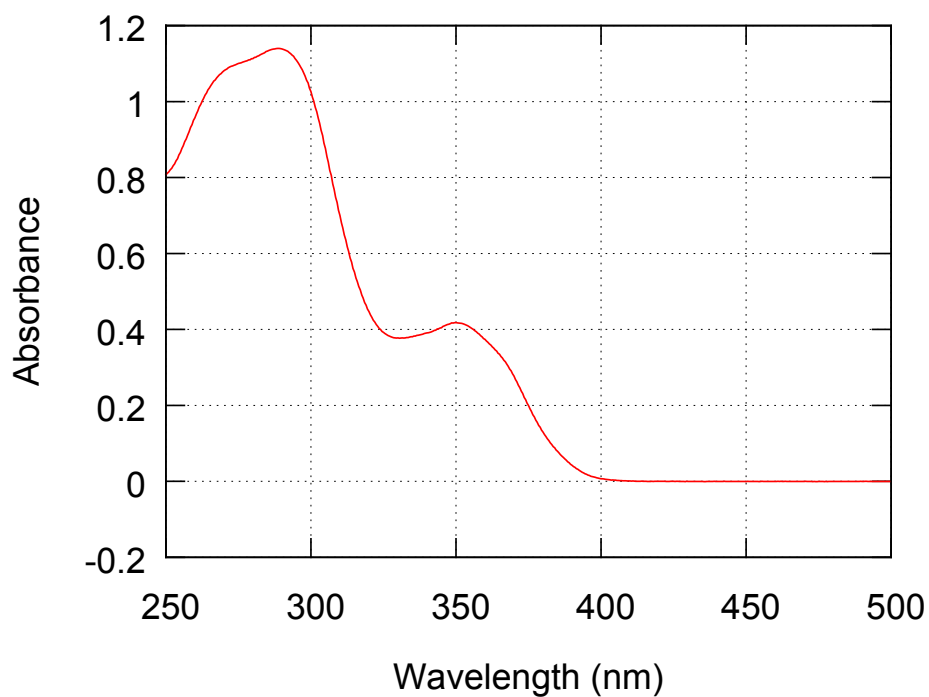


Figure S204. UV-vis absorption spectrum of **3b(60/40)** in *n*-pentane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

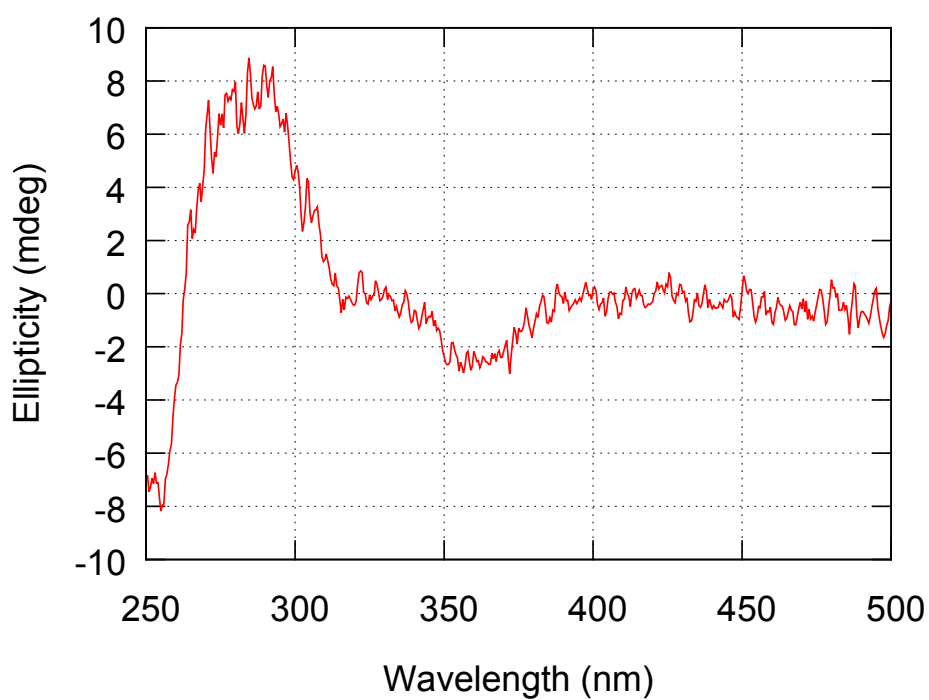


Figure S205. CD spectrum of **3b(60/40)** in *n*-pentane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

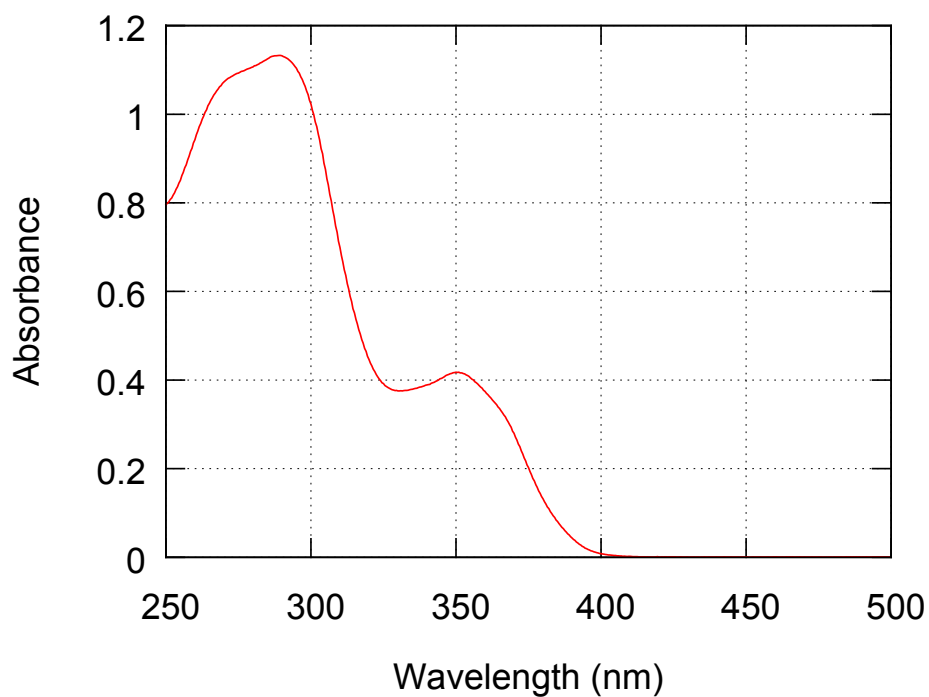


Figure S206. UV-vis absorption spectrum of **3b(60/40)** in *n*-hexane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

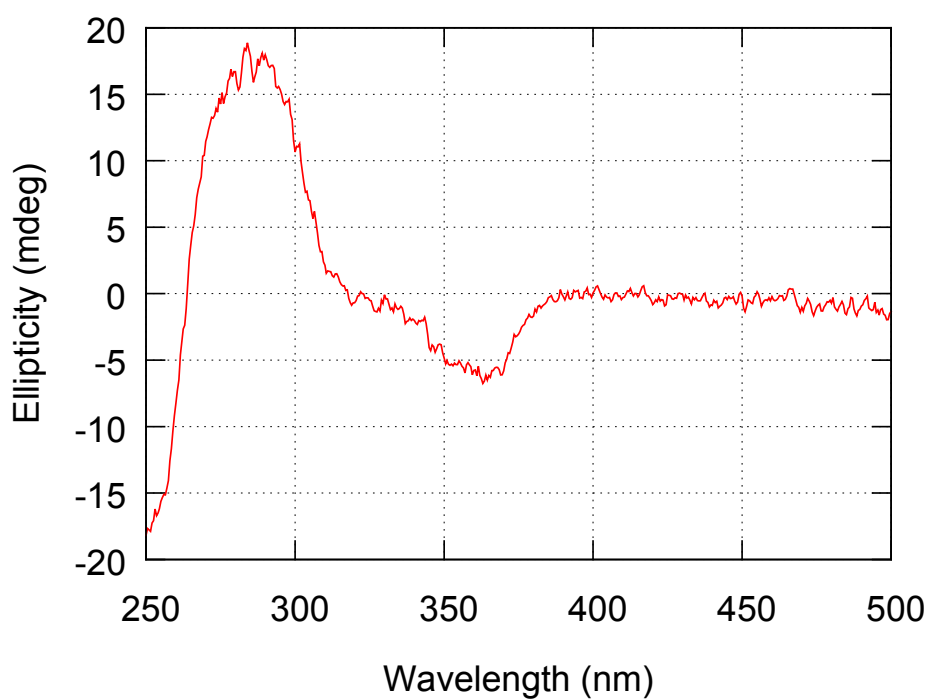


Figure S207. CD spectrum of **3b(60/40)** in *n*-hexane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

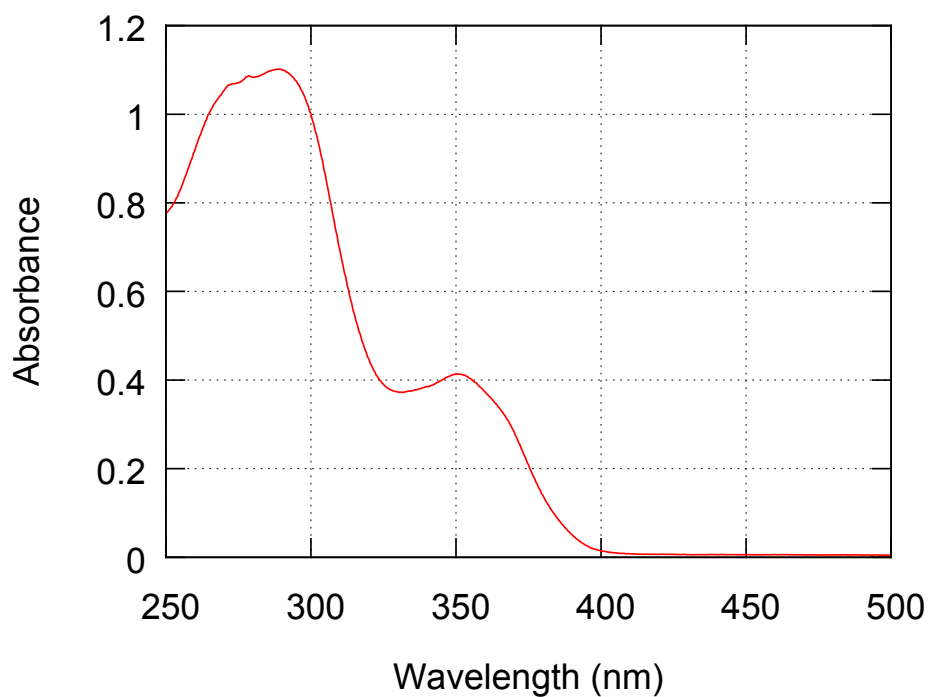


Figure S208. UV-vis absorption spectrum of **3b(60/40)** in *n*-heptane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

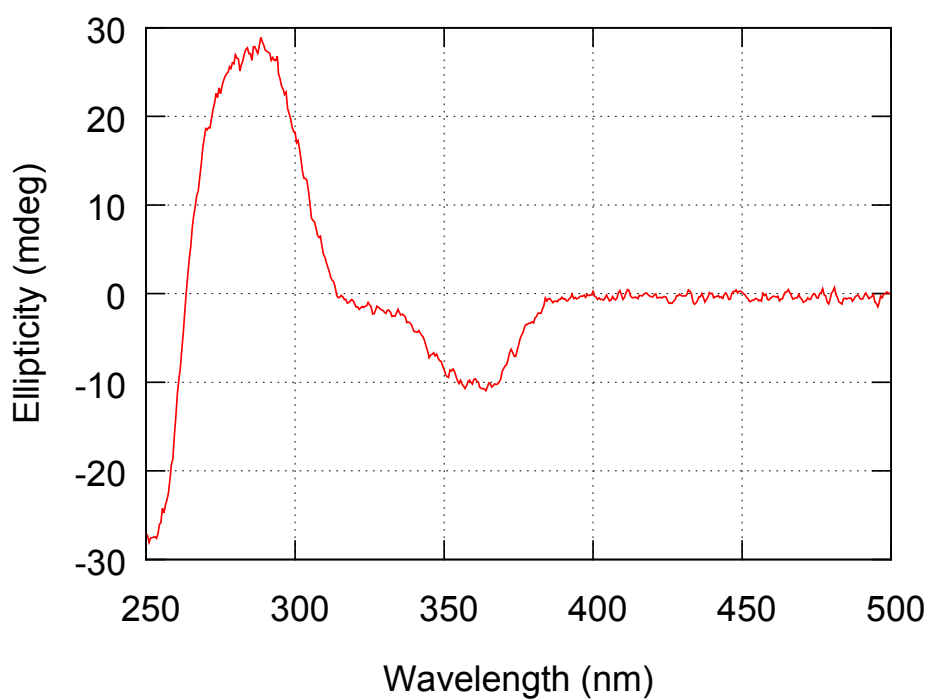


Figure S209. CD spectrum of **3b(60/40)** in *n*-heptane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

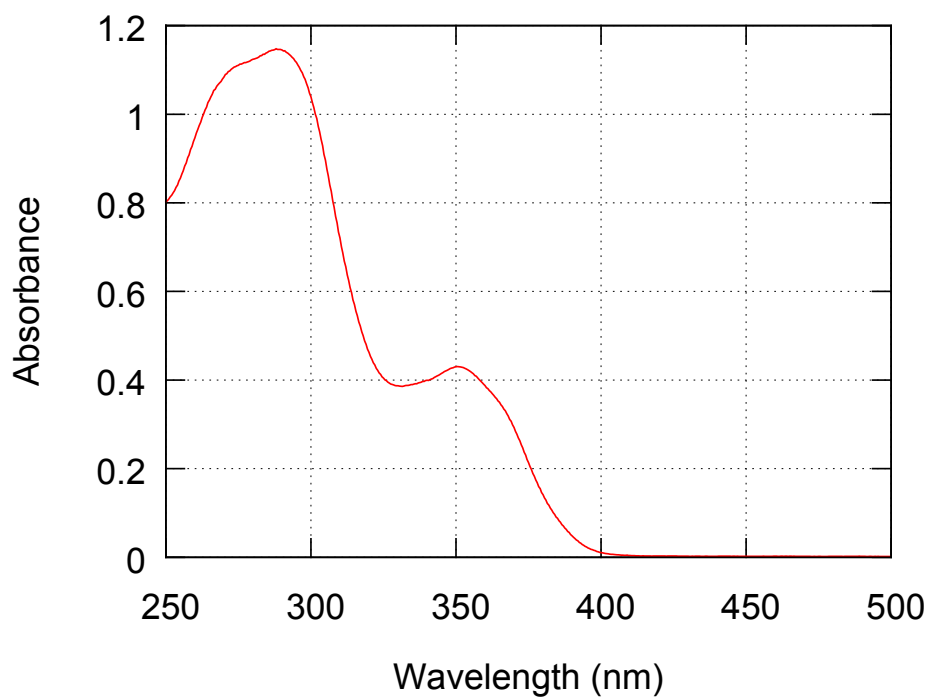


Figure S210. UV-vis absorption spectrum of **3b(60/40)** in *n*-octane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

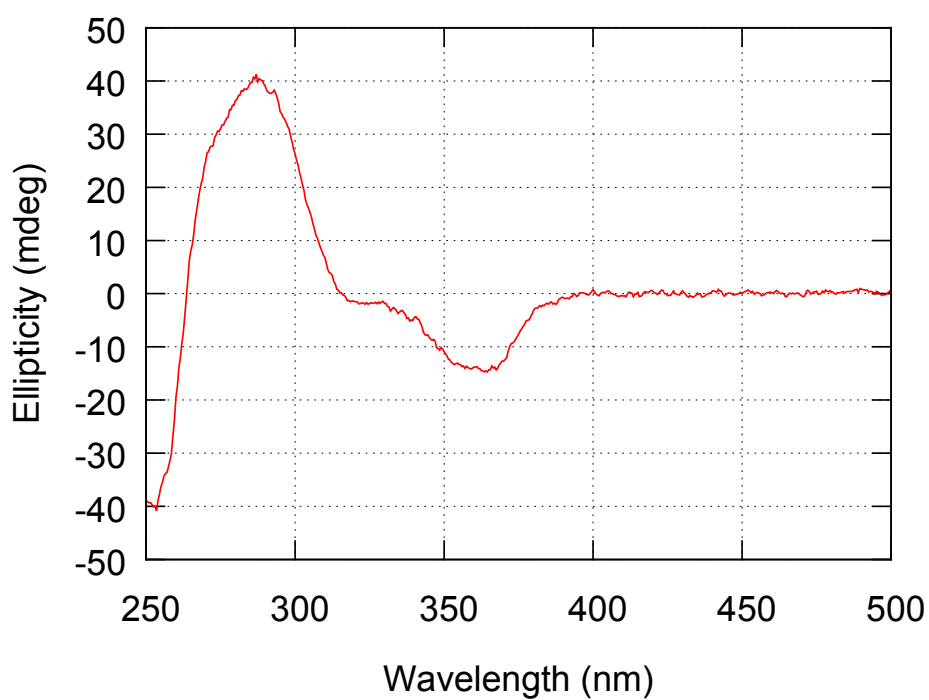


Figure S211. CD spectrum of **3b(60/40)** in *n*-octane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

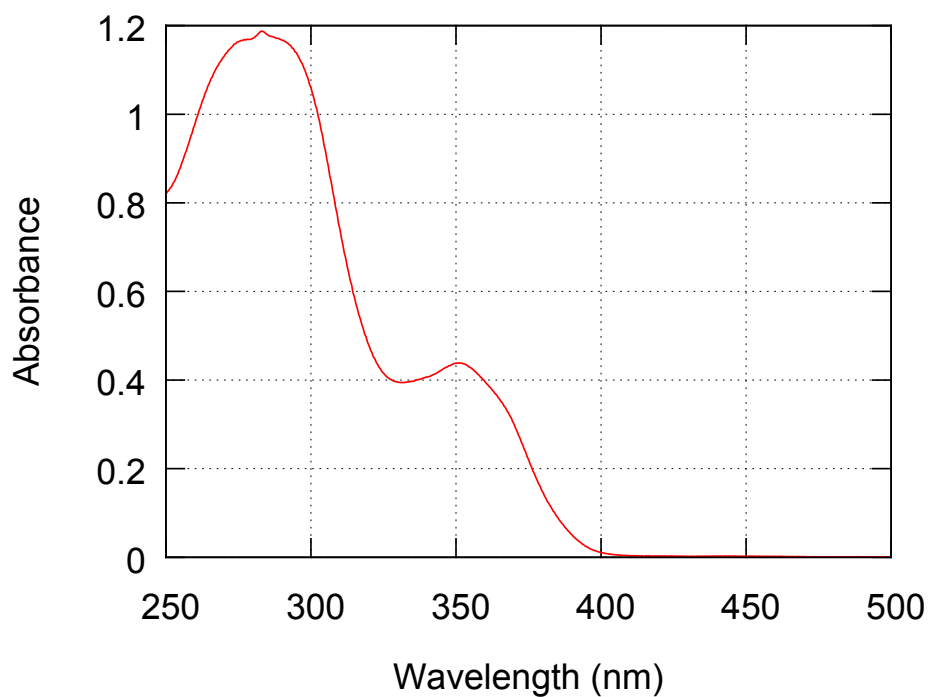


Figure S212. UV-vis absorption spectrum of **3b(60/40)** in *n*-nonane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

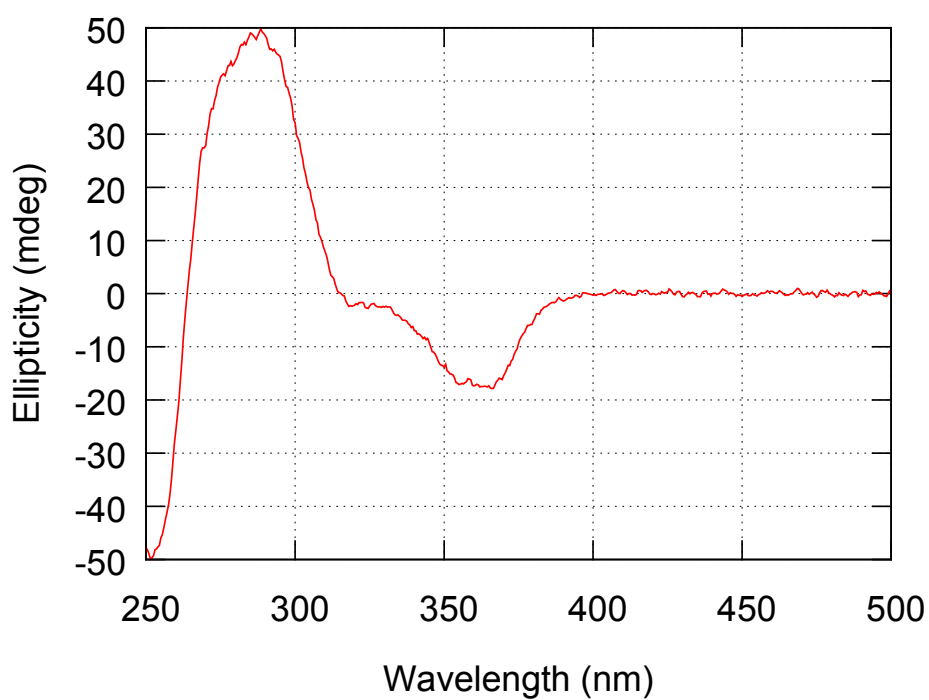


Figure S213. CD spectrum of **3b(60/40)** in *n*-nonane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

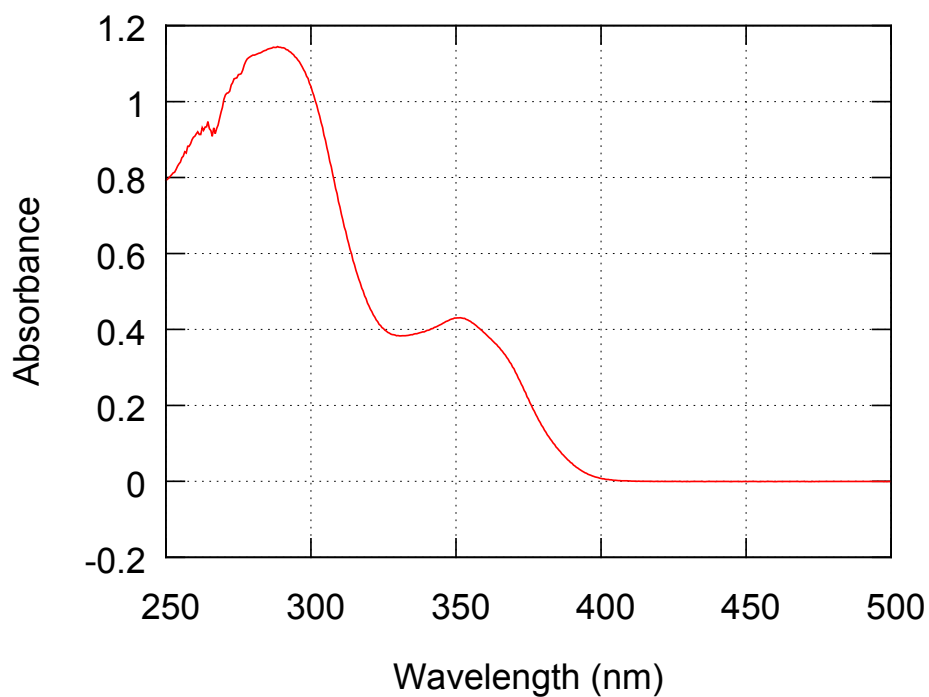


Figure S214. UV-vis absorption spectrum of **3b(60/40)** in *n*-decane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

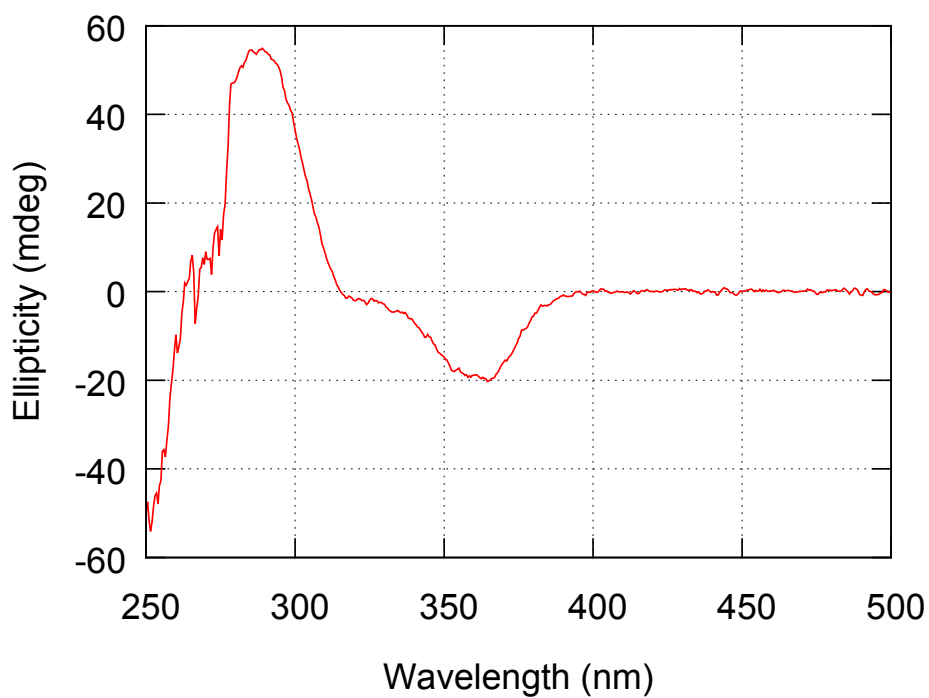


Figure S215. CD spectrum of **3b(60/40)** in *n*-decane ( $2.02 \times 10^{-2}$  g/L, path length = 10 mm).

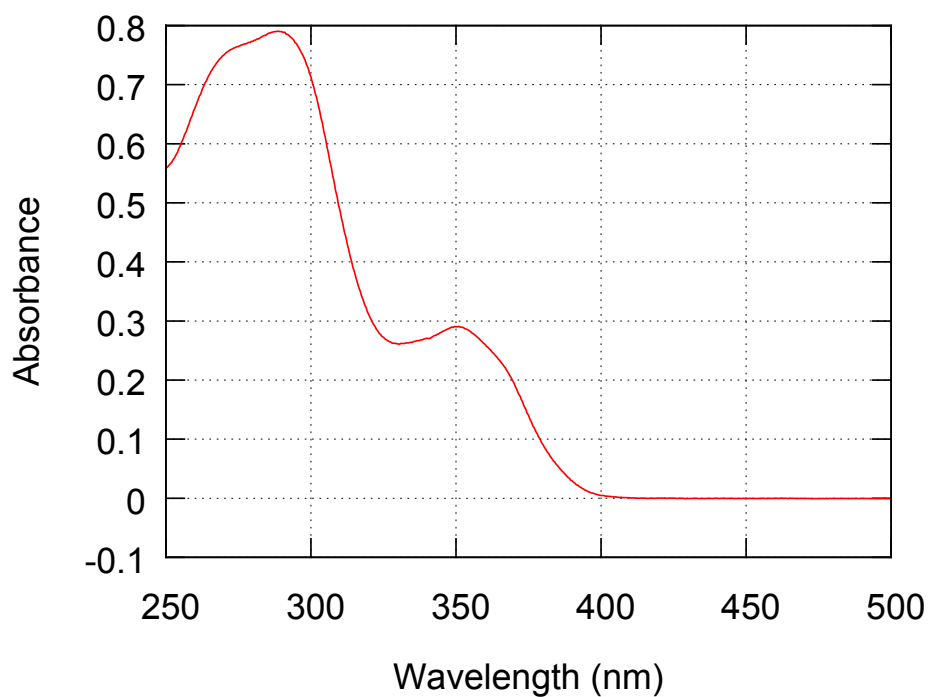


Figure S216. UV-vis absorption spectrum of **3b(80/20)** in *n*-pentane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

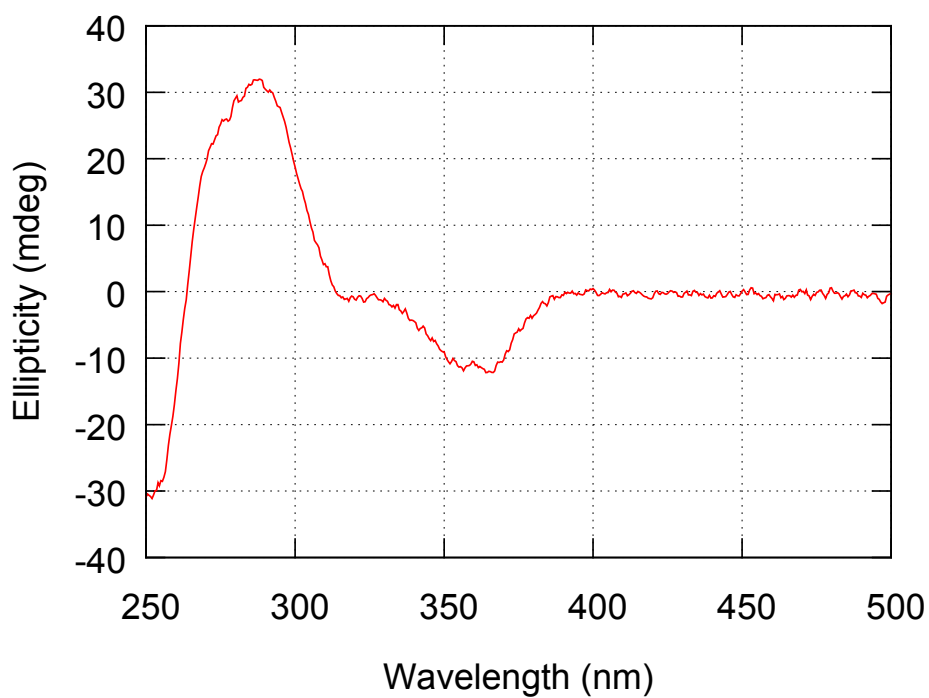


Figure S217. CD spectrum of **3b(80/20)** in *n*-pentane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

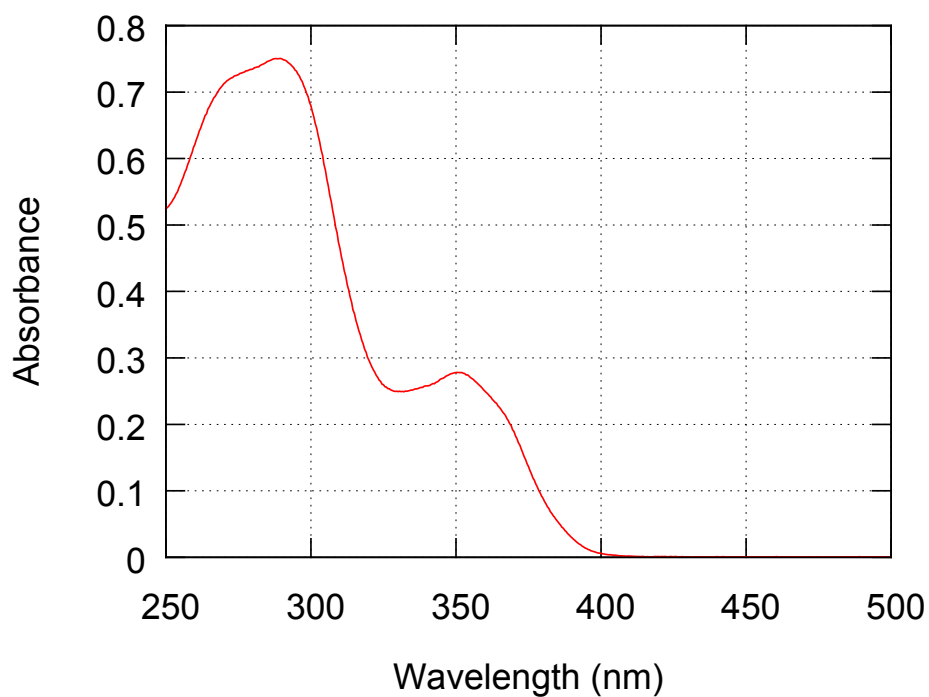


Figure S218. UV-vis absorption spectrum of **3b(80/20)** in *n*-hexane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

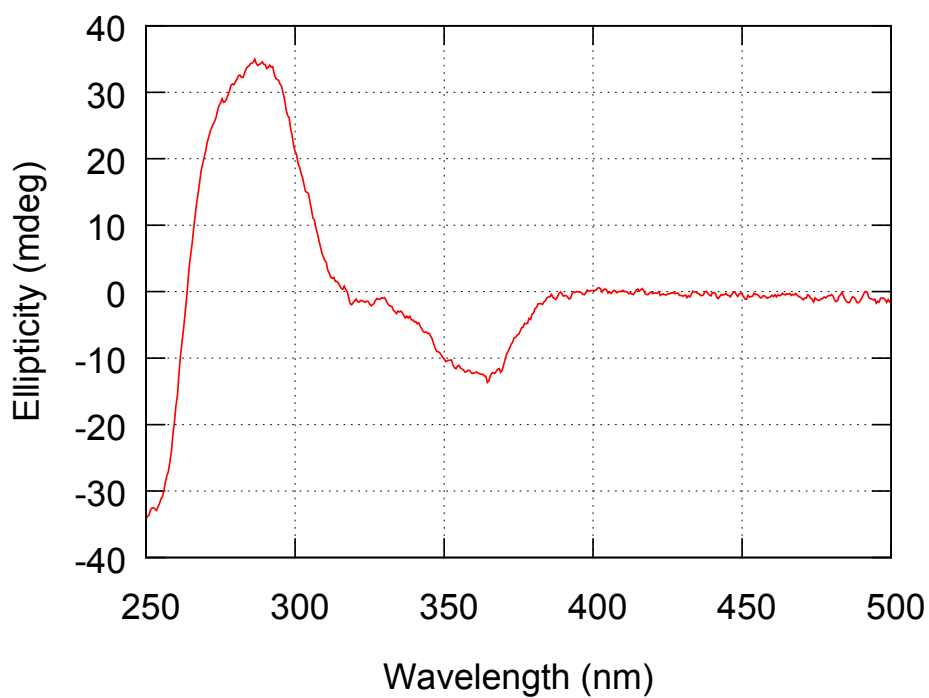


Figure S219. CD spectrum of **3b(80/20)** in *n*-hexane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

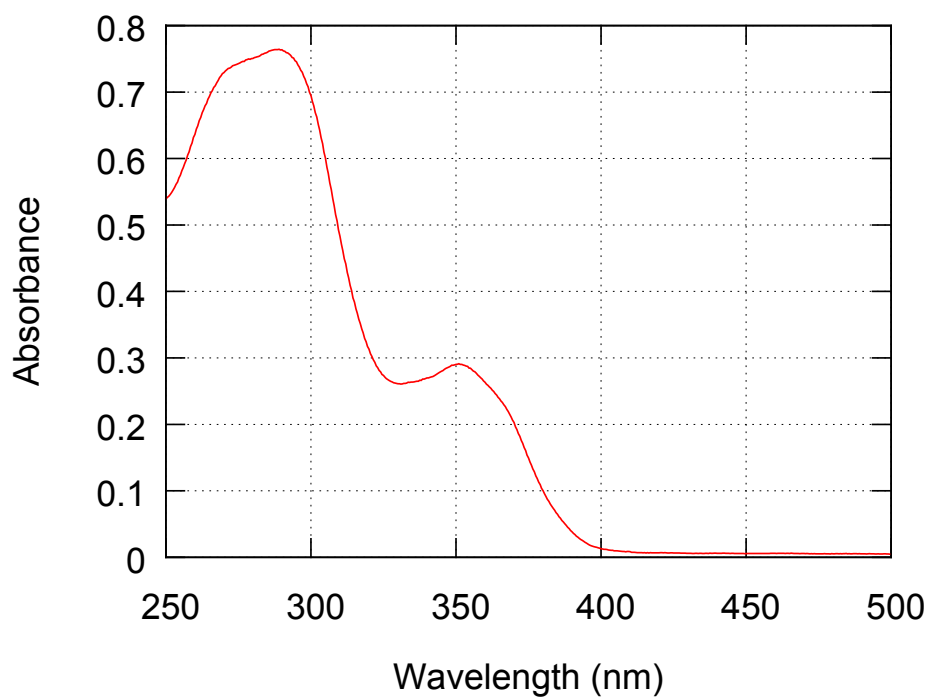


Figure S220. UV-vis absorption spectrum of **3b(80/20)** in *n*-heptane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

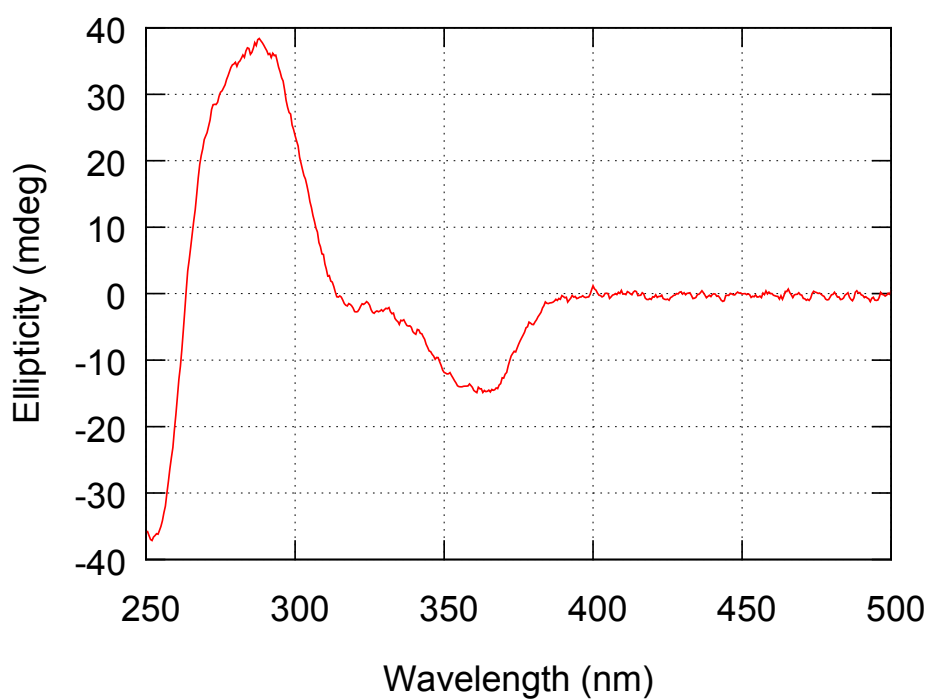


Figure S221. CD spectrum of **3b(80/20)** in *n*-heptane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

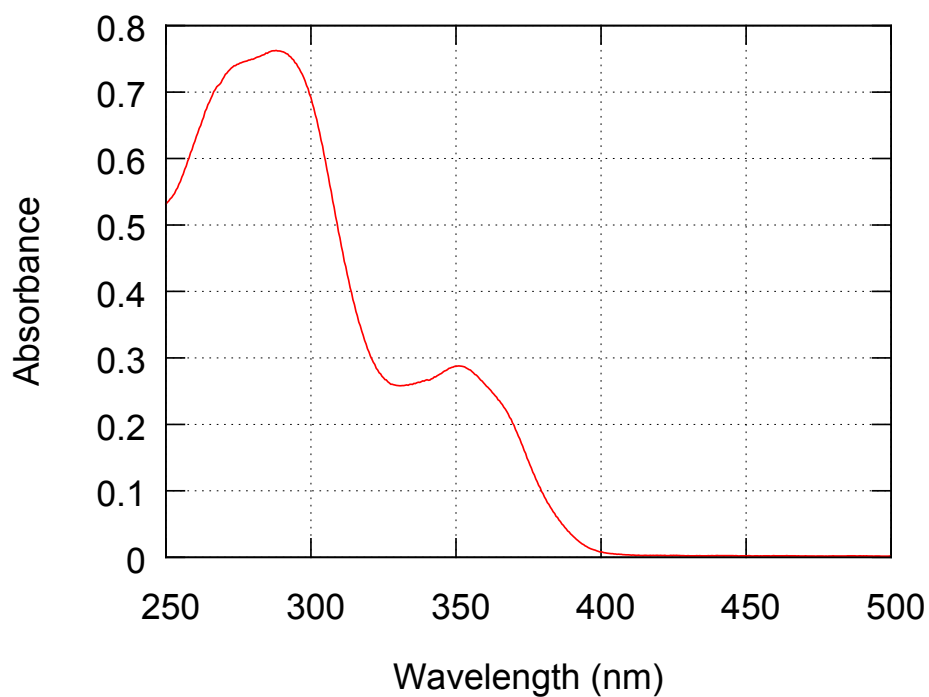


Figure S222. UV-vis absorption spectrum of **3b(80/20)** in *n*-octane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

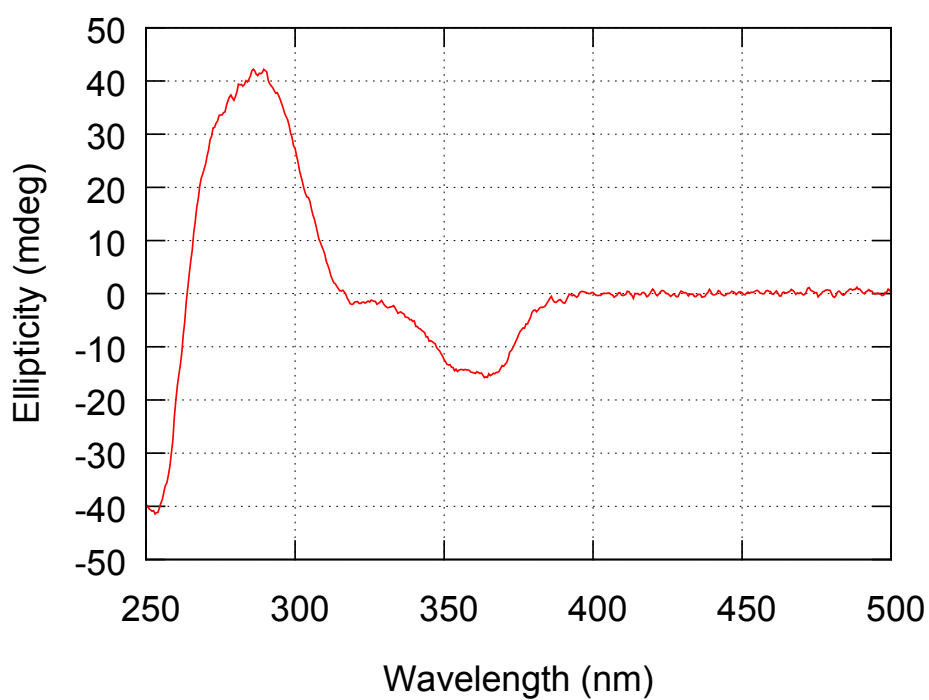


Figure S223. CD spectrum of **3b(80/20)** in *n*-octane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

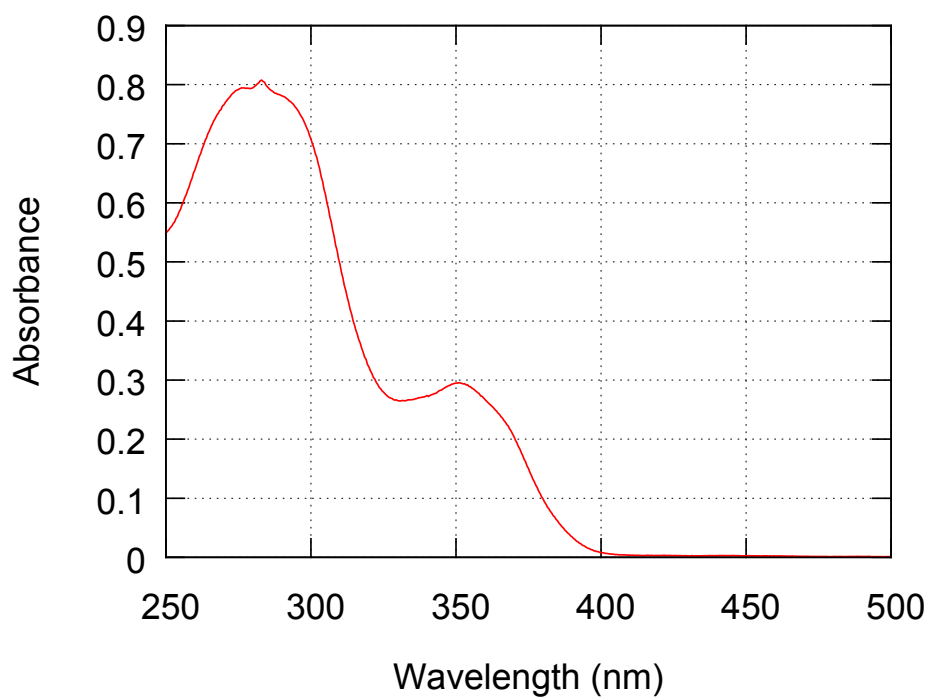


Figure S224. UV-vis absorption spectrum of **3b(80/20)** in *n*-nonane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

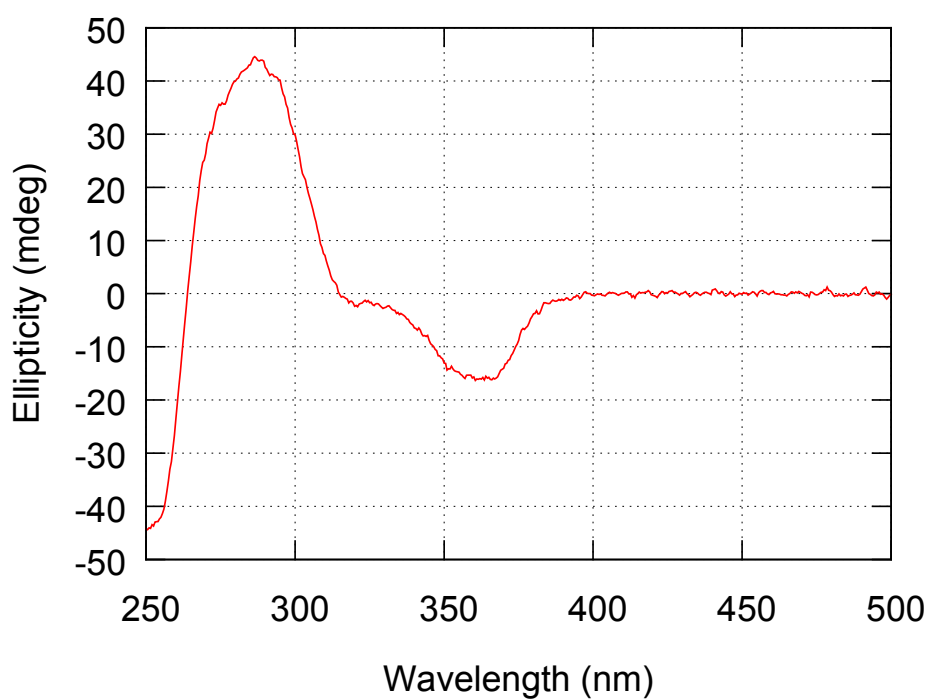


Figure S225. CD spectrum of **3b(80/20)** in *n*-nonane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

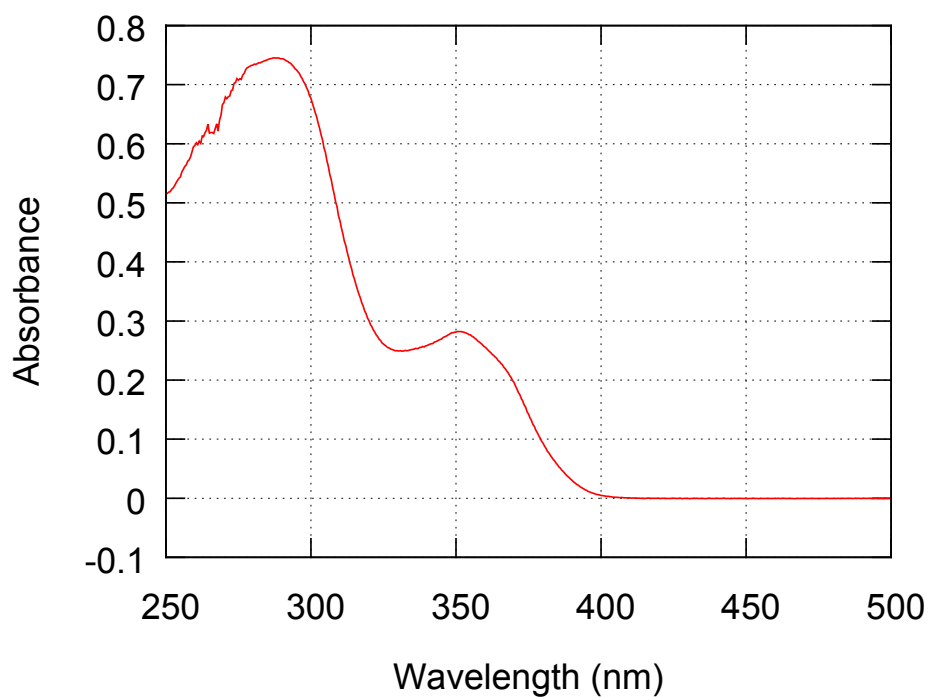


Figure S226. UV-vis absorption spectrum of **3b(80/20)** in *n*-decane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

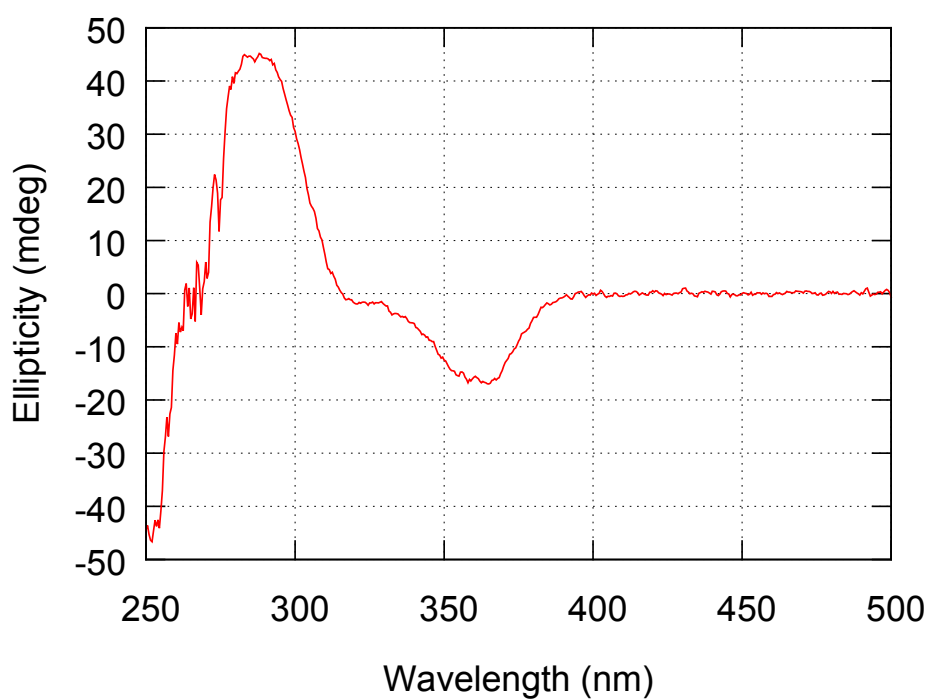


Figure S227. CD spectrum of **3b(80/20)** in *n*-decane ( $1.44 \times 10^{-2}$  g/L, path length = 10 mm).

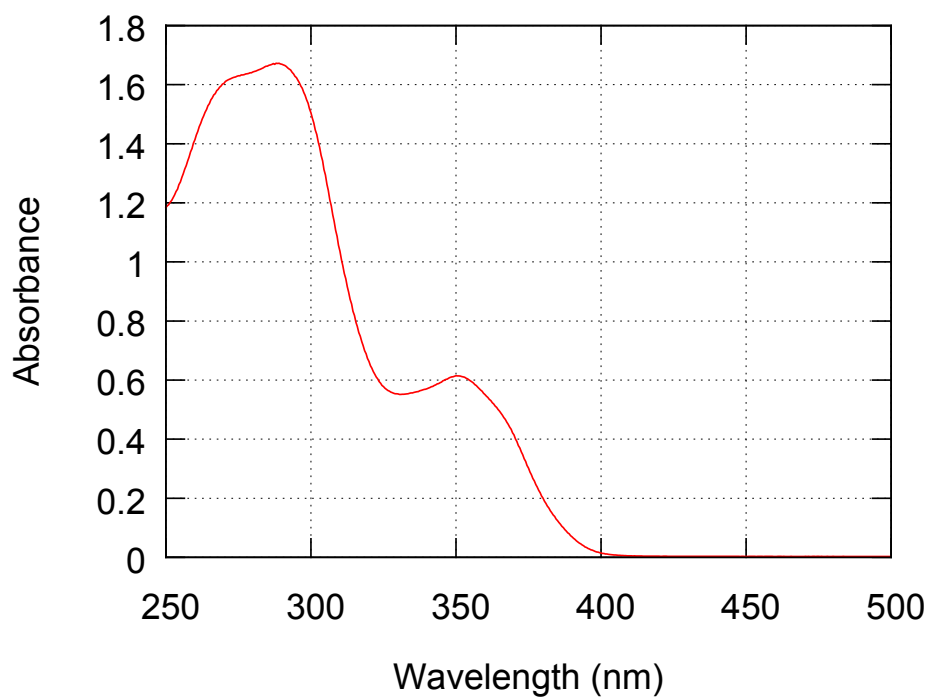


Figure S228. UV-vis absorption spectrum of **3b(350/650)** in *n*-octane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

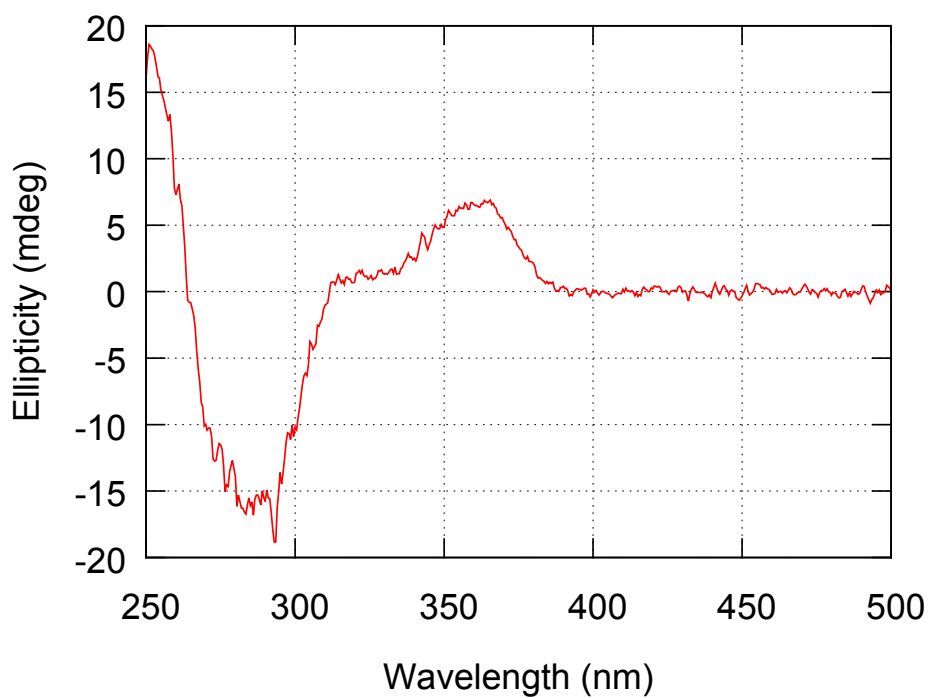


Figure S229. CD spectrum of **3b(350/650)** in *n*-octane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

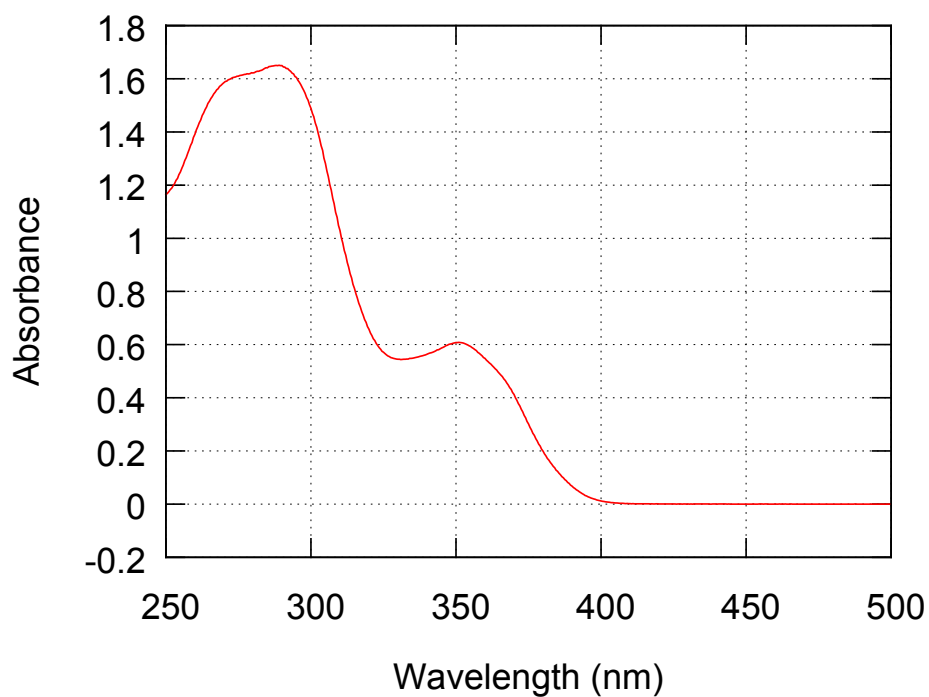


Figure S230. UV-vis absorption spectrum of **3b(350/650)** in *n*-nonane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

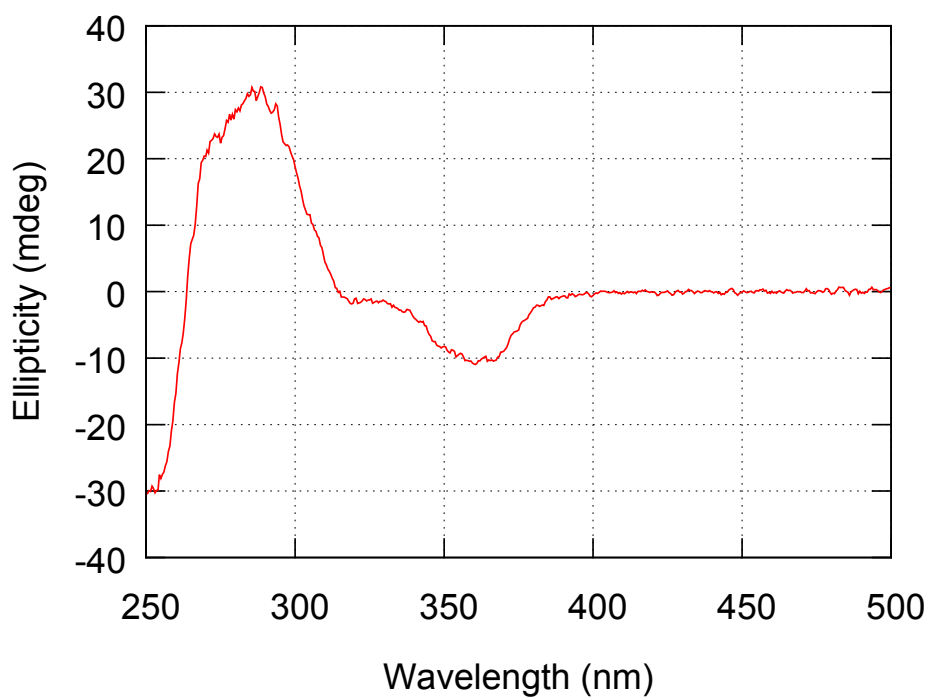


Figure S231. CD spectrum of **3b(350/650)** in *n*-nonane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

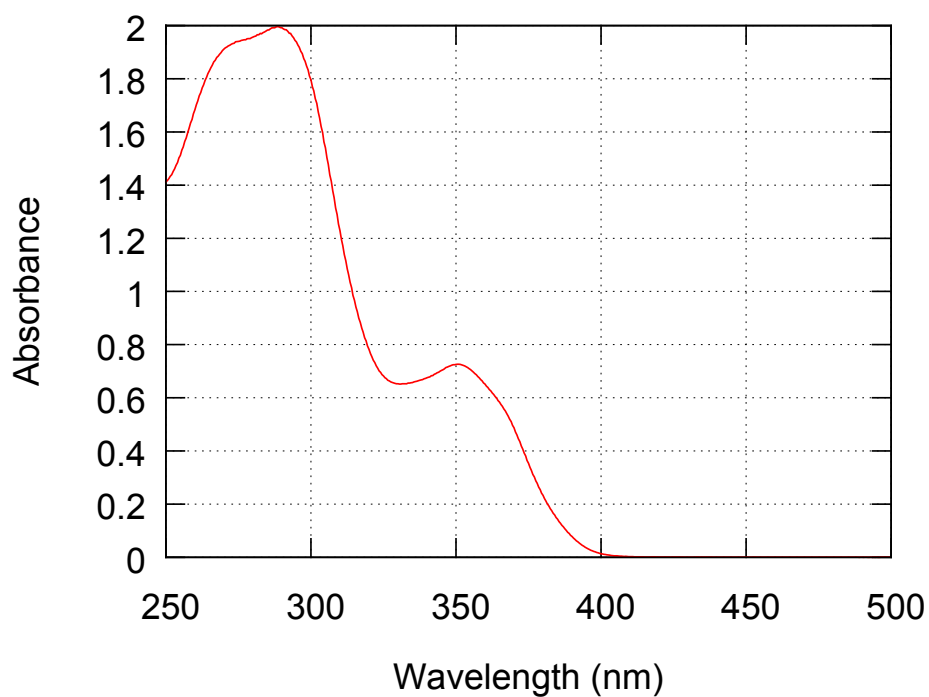


Figure S232. UV-vis absorption spectrum of **3b(400/600)** in *n*-heptane ( $3.90 \times 10^{-2}$  g/L, path length = 10 mm).

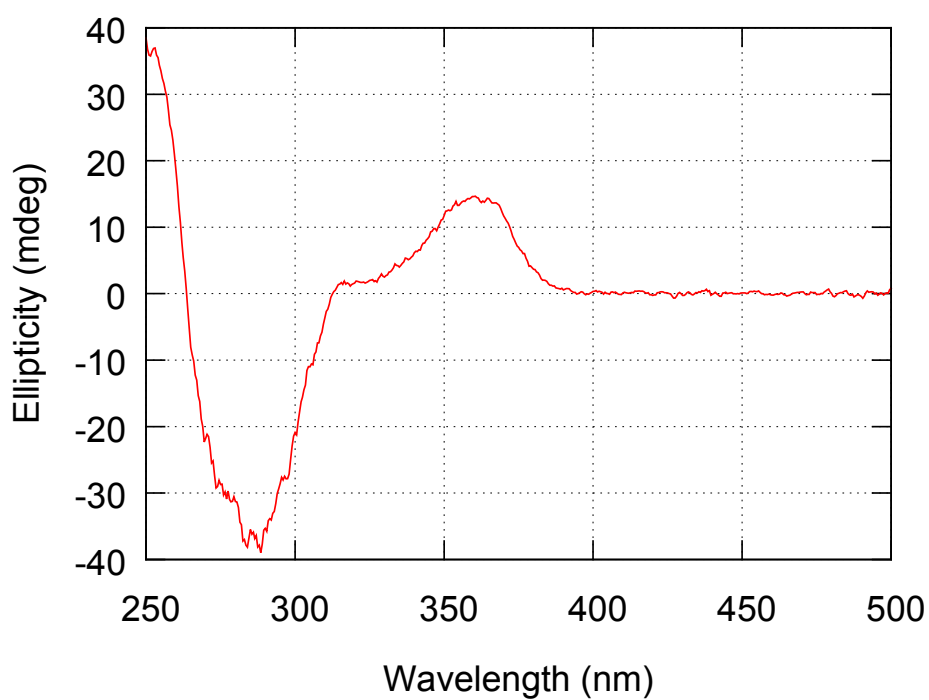


Figure S233. CD spectrum of **3b(400/600)** in *n*-heptane ( $3.90 \times 10^{-2}$  g/L, path length = 10 mm).

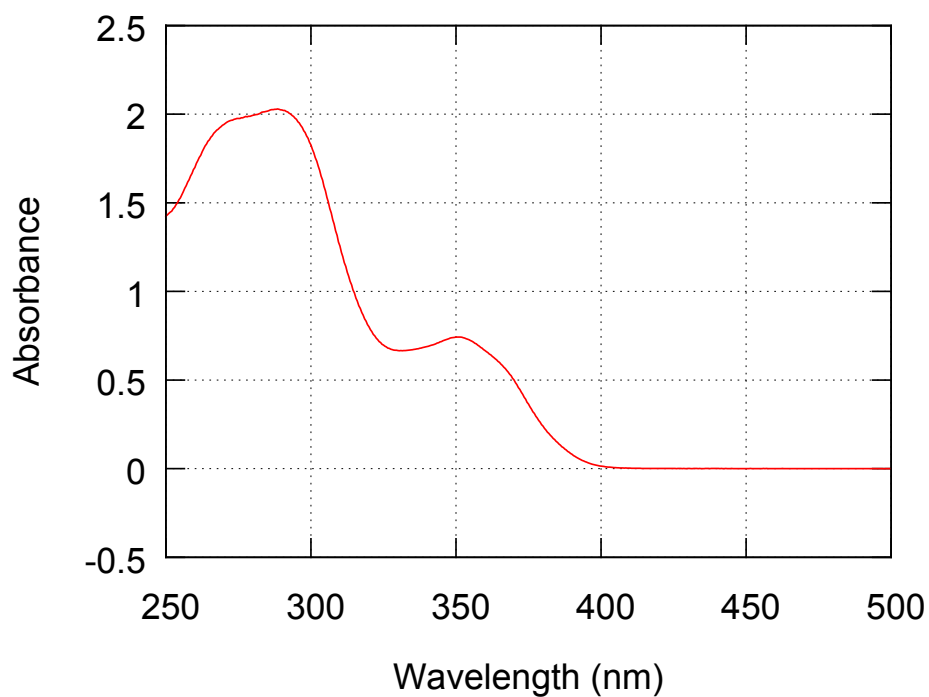


Figure S234. UV-vis absorption spectrum of **3b(400/600)** in *n*-octane ( $3.90 \times 10^{-2}$  g/L, path length = 10 mm).

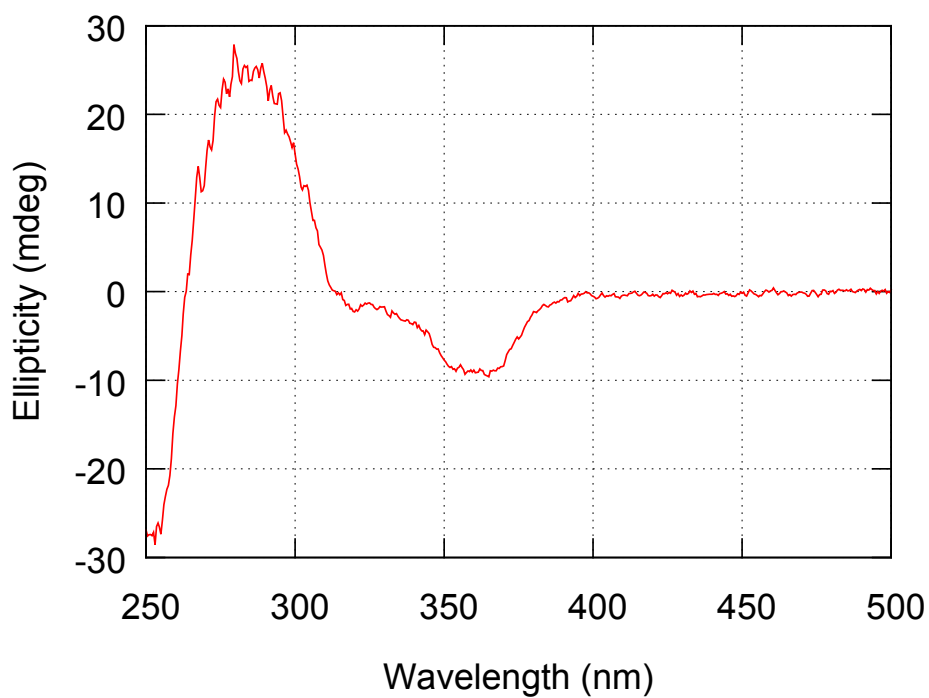


Figure S235. CD spectrum of **3b(400/600)** in *n*-octane ( $3.90 \times 10^{-2}$  g/L, path length = 10 mm).

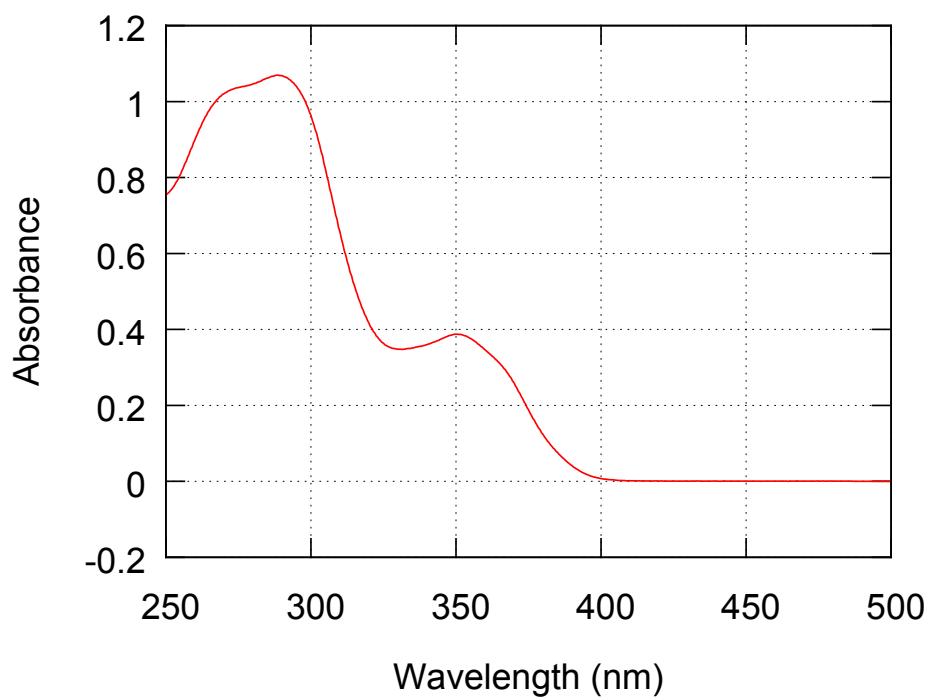


Figure S236. UV-vis absorption spectrum of **3b(500/500)** in *n*-hexane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

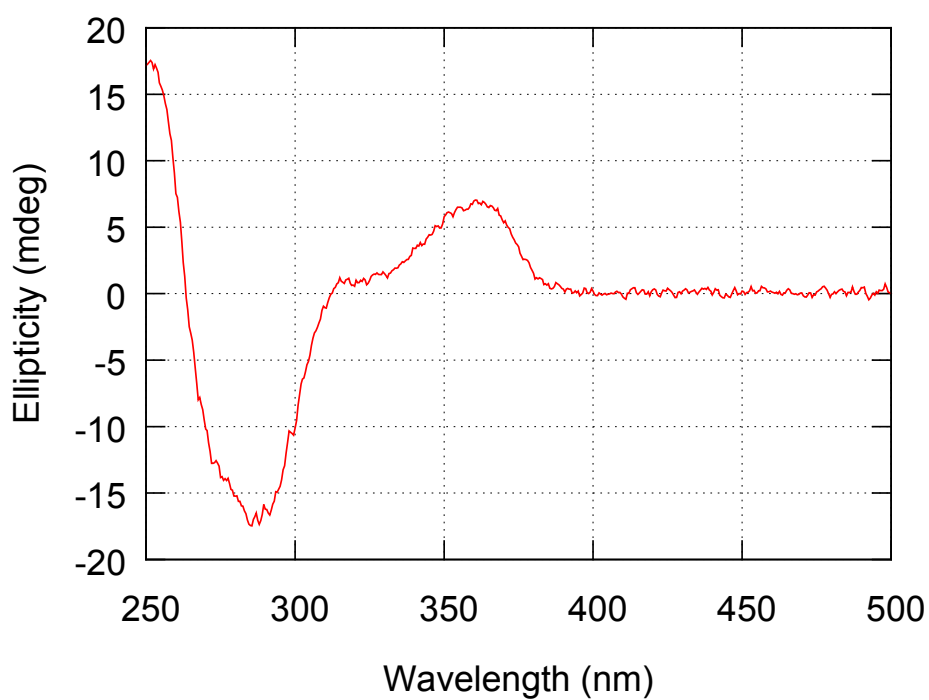


Figure S237. CD spectrum of **3b(500/500)** in *n*-hexane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

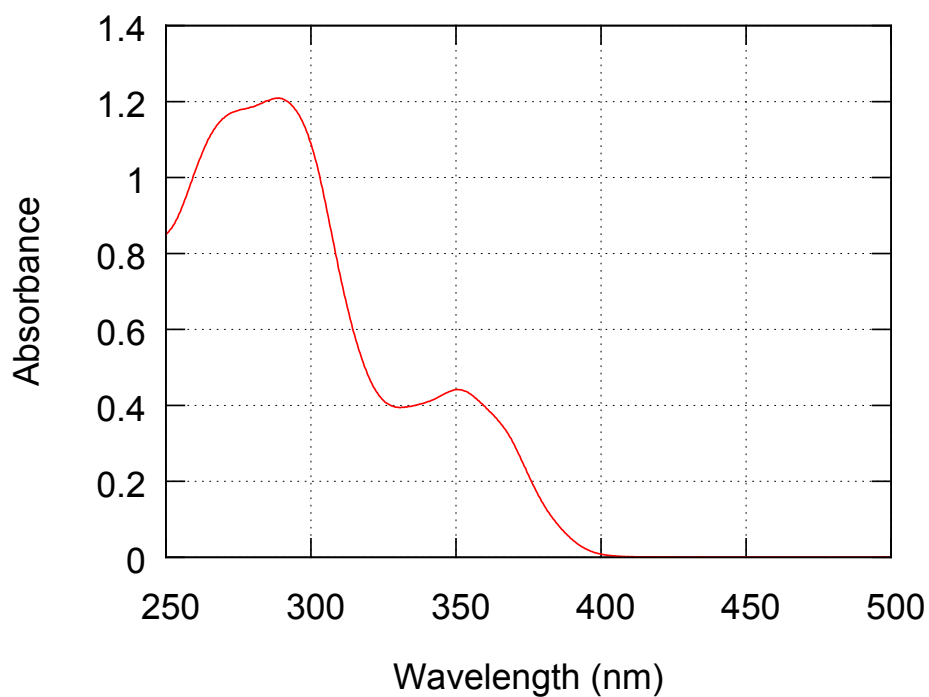


Figure S238. UV-vis absorption spectrum of **3b(500/500)** in *n*-heptane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

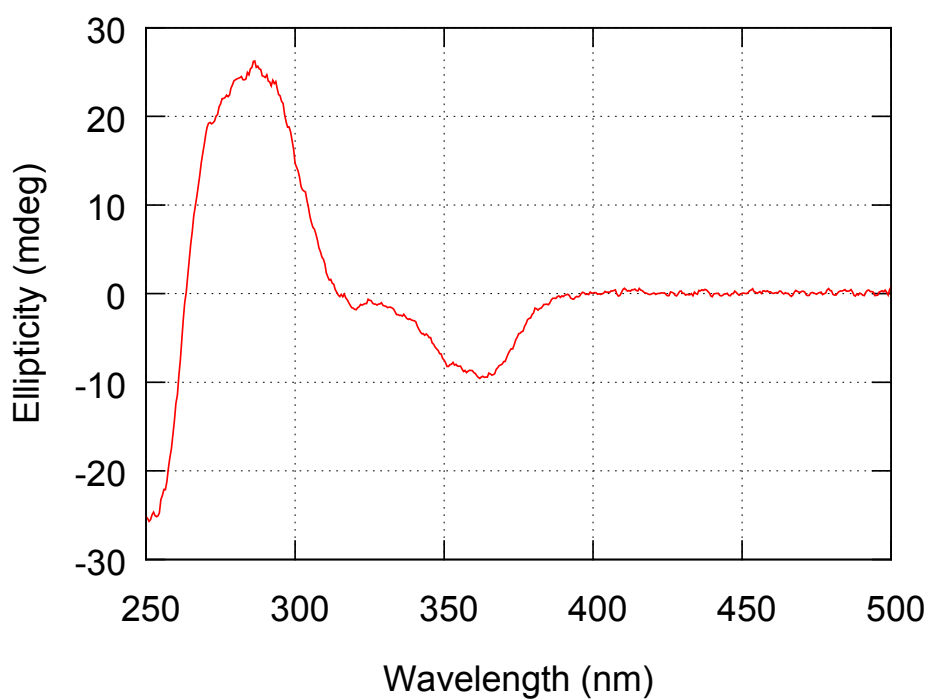


Figure S239. CD spectrum of **3b(500/500)** in *n*-heptane ( $2.65 \times 10^{-2}$  g/L, path length = 10 mm).

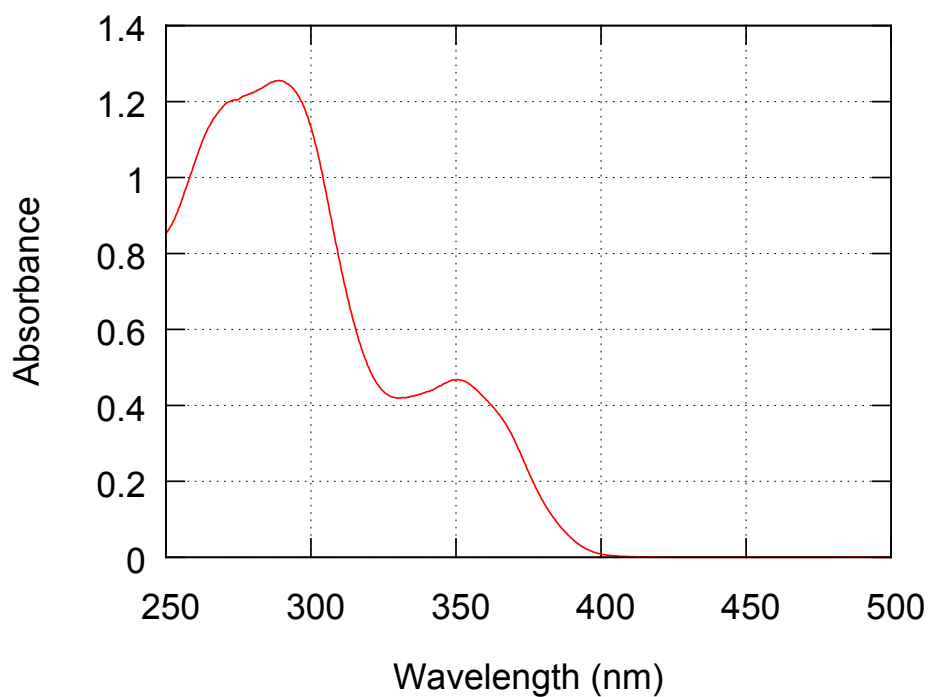


Figure S240. UV-vis absorption spectrum of **3b(400/600/2)** in *n*-heptane ( $3.32 \times 10^{-2}$  g/L, path length = 10 mm).

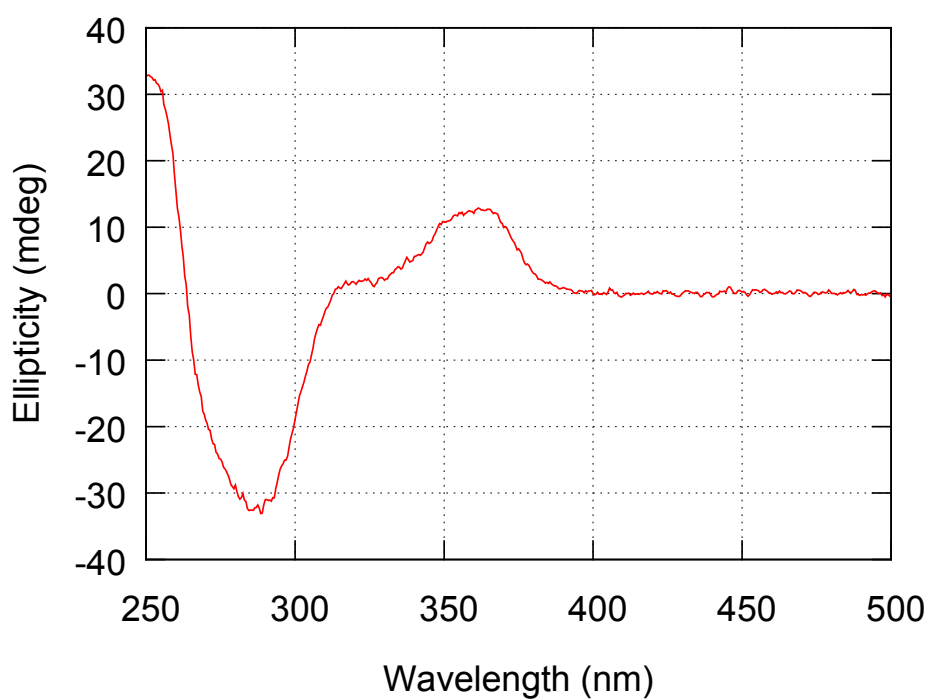


Figure S241. CD spectrum of **3b(400/600/2)** in *n*-heptane ( $3.32 \times 10^{-2}$  g/L, path length = 10 mm).

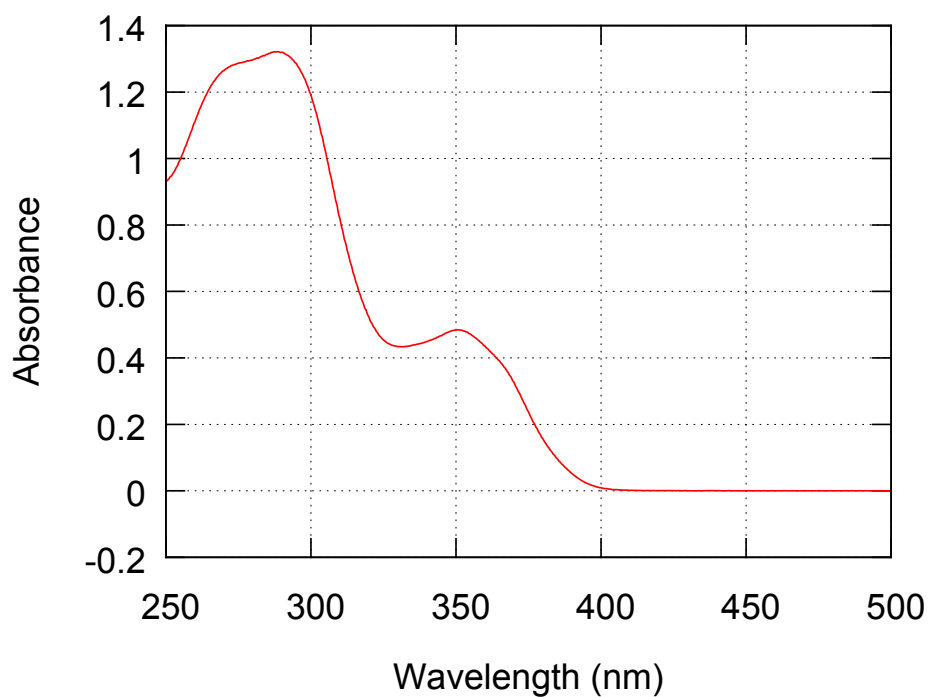


Figure S242. UV-vis absorption spectrum of **3b(400/600/2)** in *n*-octane ( $3.32 \times 10^{-2}$  g/L, path length = 10 mm).

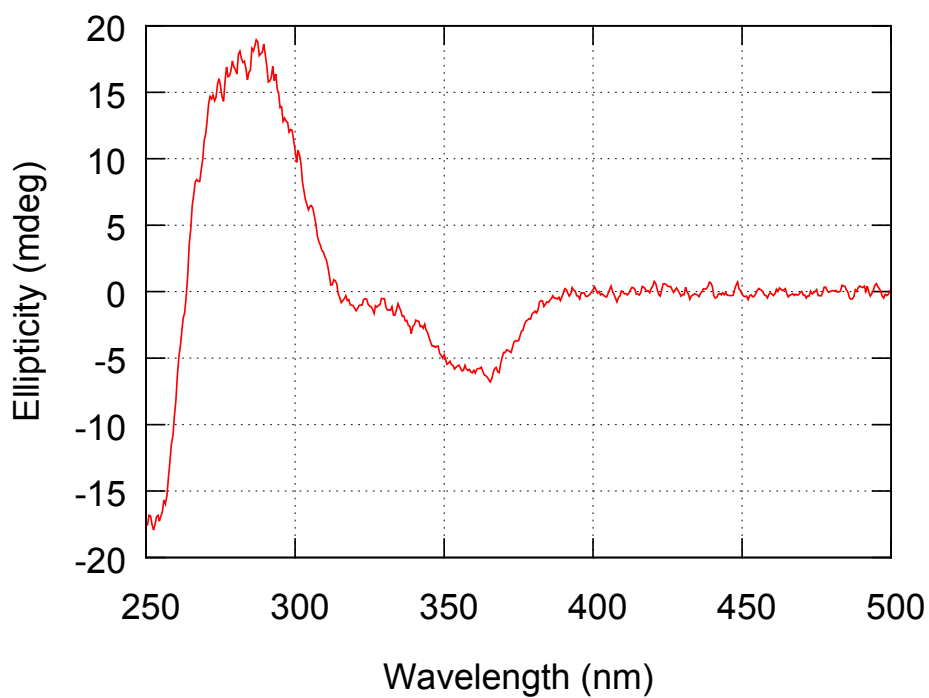


Figure S243. CD spectrum of **3b(400/600/2)** in *n*-octane ( $3.32 \times 10^{-2}$  g/L, path length = 10 mm).