Supporting Information for

Porphyrins bearing long alkoxyl chains and carbazole for dye-sensitized solar cells: tuning cell performance through an ethynylene bridge

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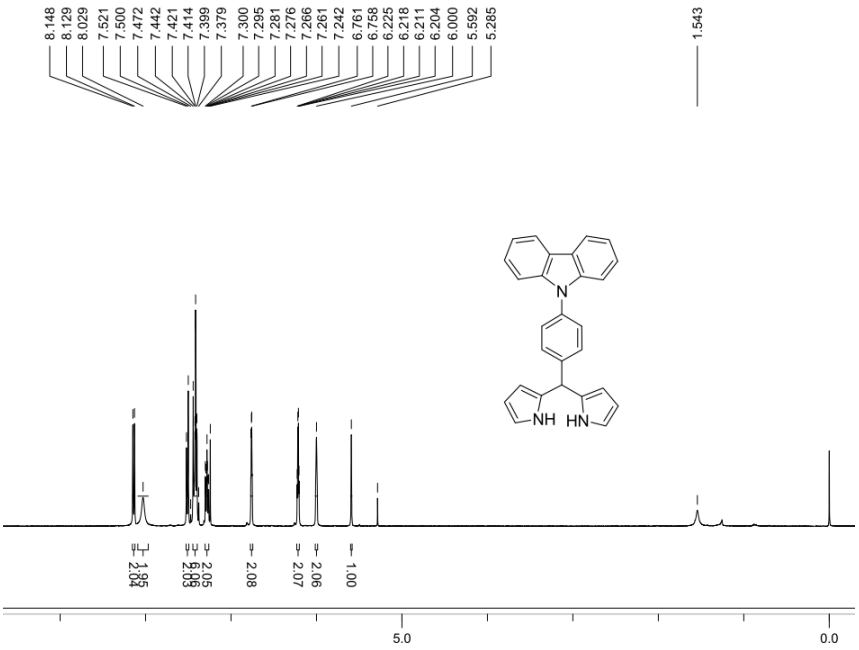

Fig. S1 The ^{1}H NMR spectrum of **1** in $CDCl_3$

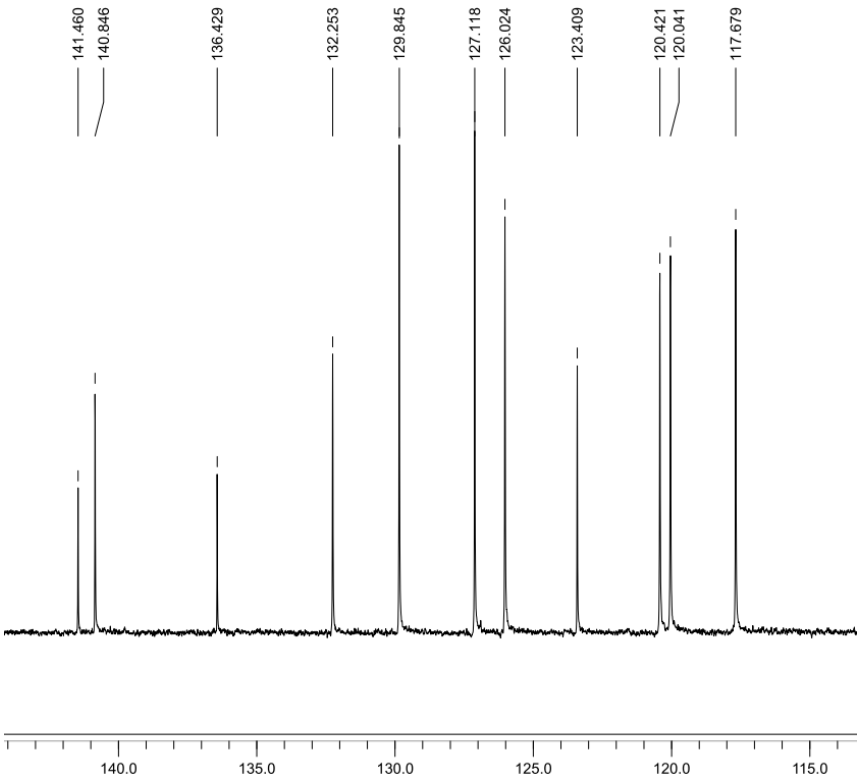

Fig. S2. The ^{13}C NMR spectrum of **1** in $CDCl_3$.

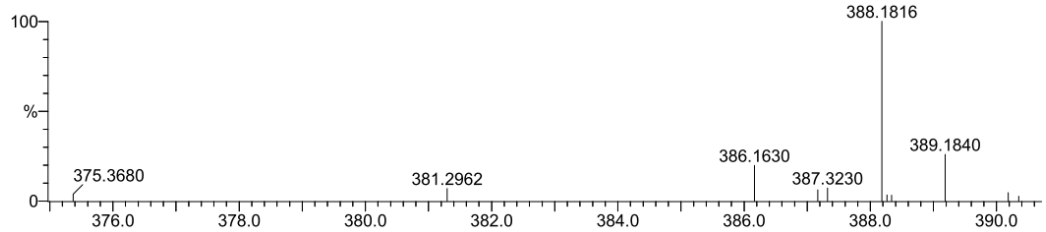

Fig. S3 HRMS of **1** in MeOH

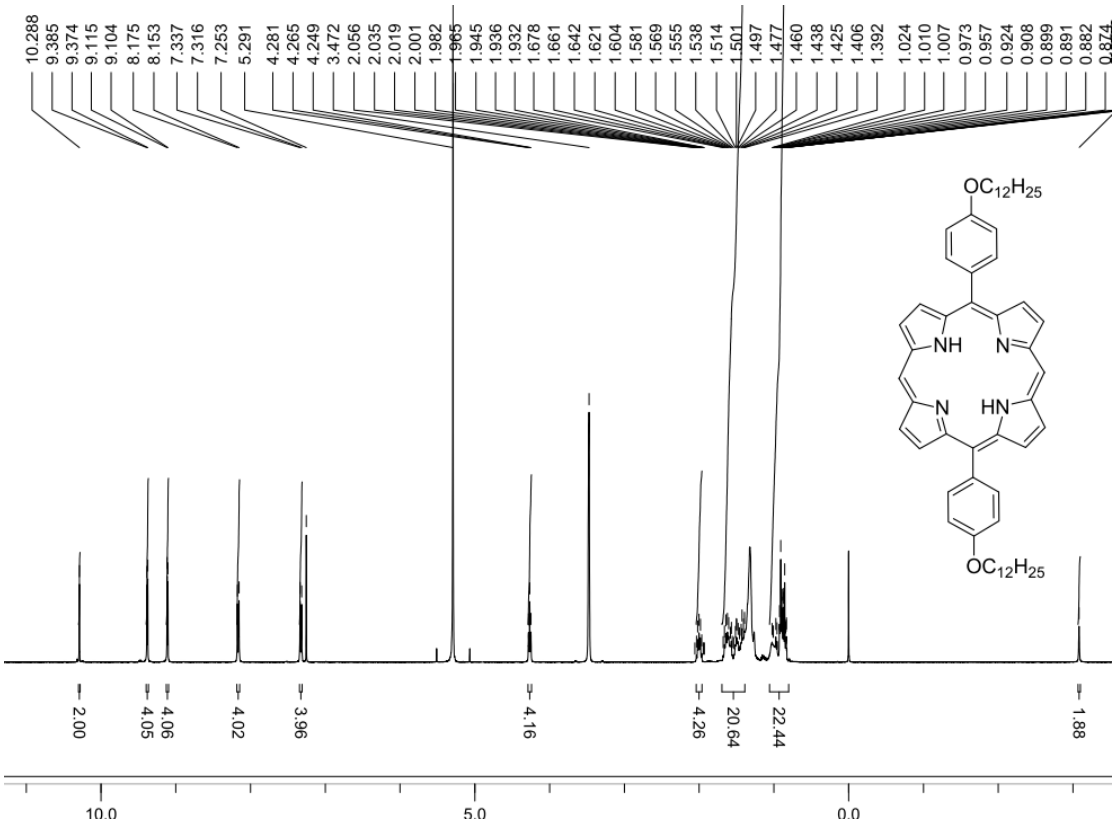

Fig. S4 The ^{1}H NMR spectrum of **2a** in $CDCl_3$

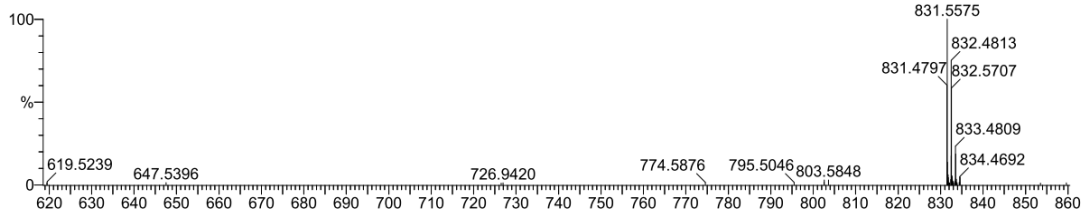

Fig. S5 HRMS of **2a** in MeOH

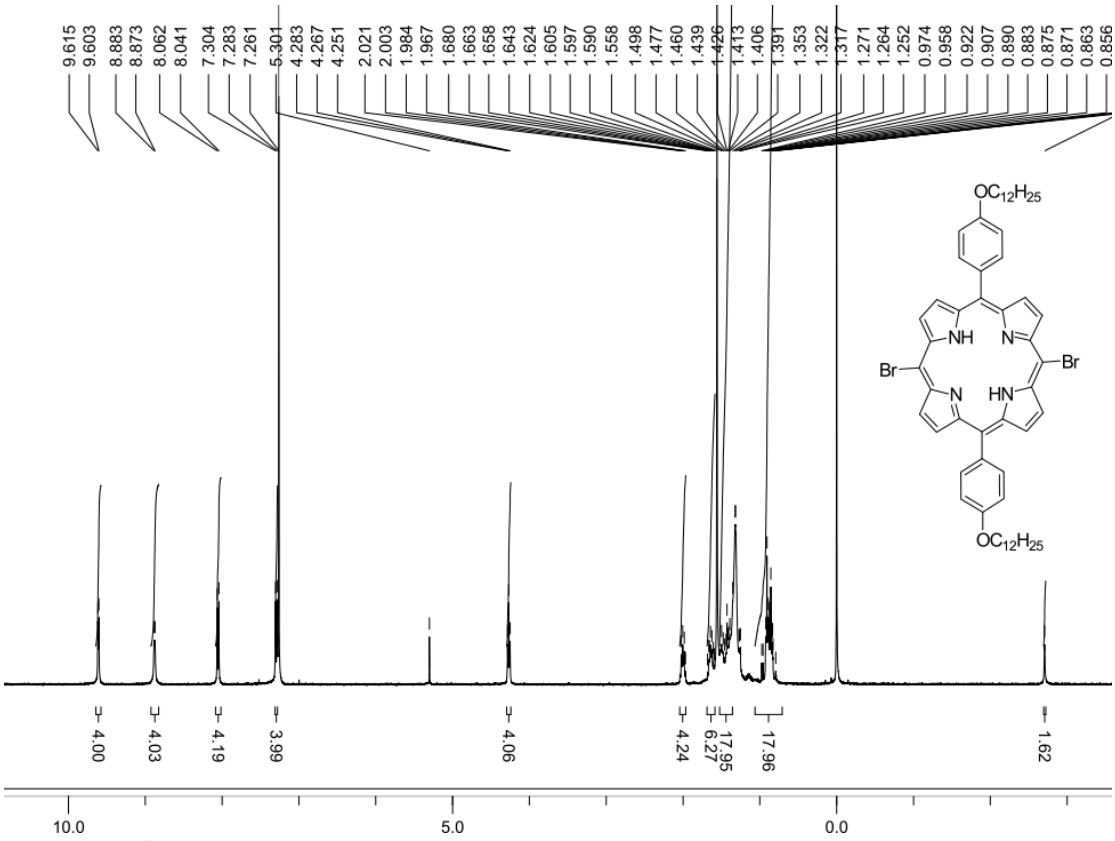

Fig. S6 The ^{1}H NMR spectrum of **3a** in $CDCl_3$

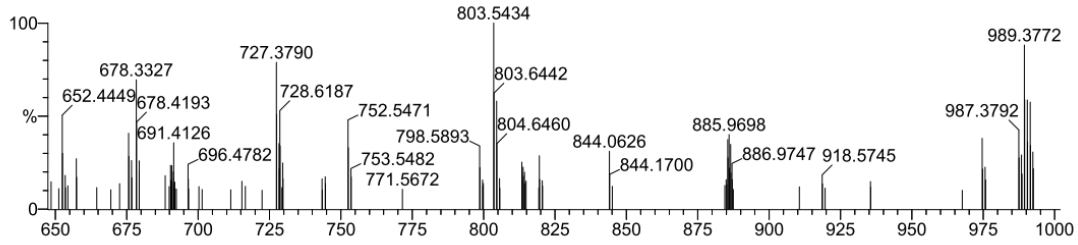

Fig. S7 HRMS of **3a** in MeOH

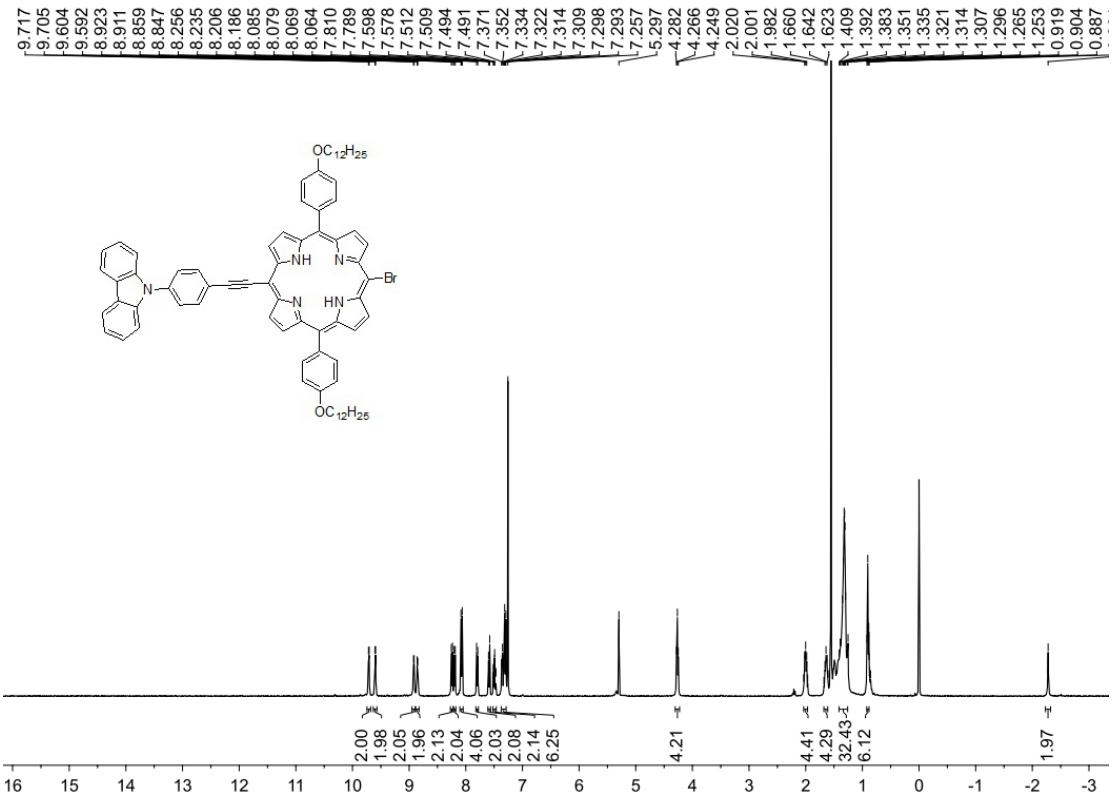

Fig. S8 The ^{1}H NMR spectrum of **4a** in $CDCl_3$

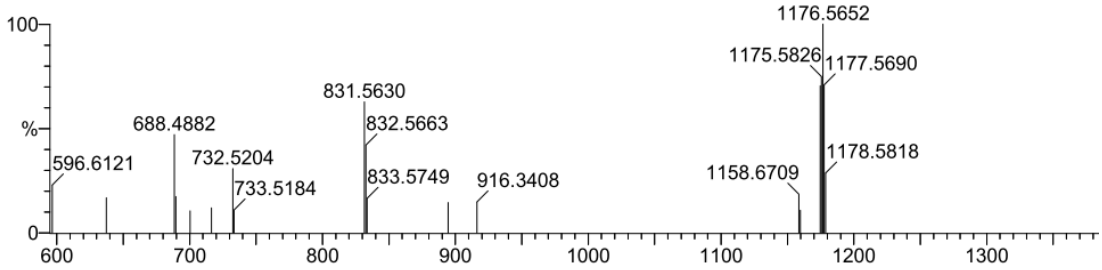

Fig. S9 HRMS of **4a** in MeOH

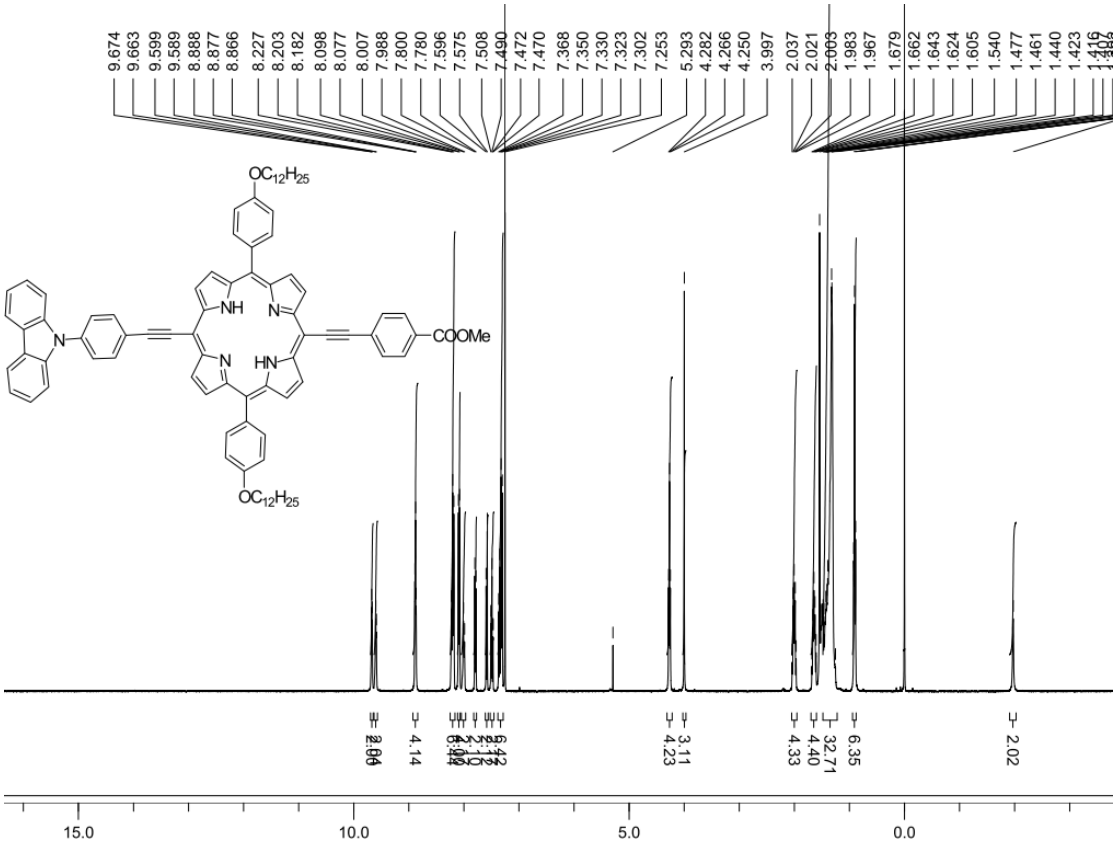

Fig. S10 The ^{1}H NMR spectrum of **5a** in $CDCl_3$

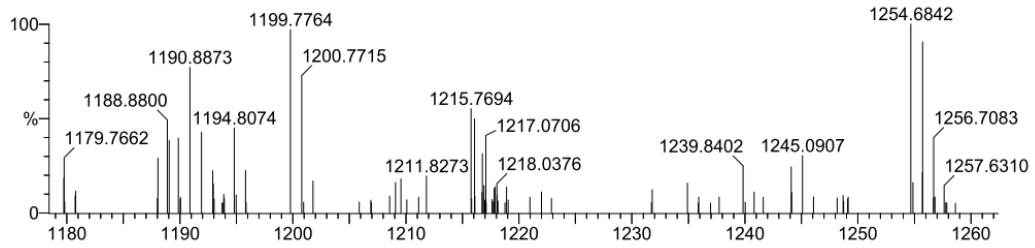

Fig. S11 HRMS of **5a** in MeOH

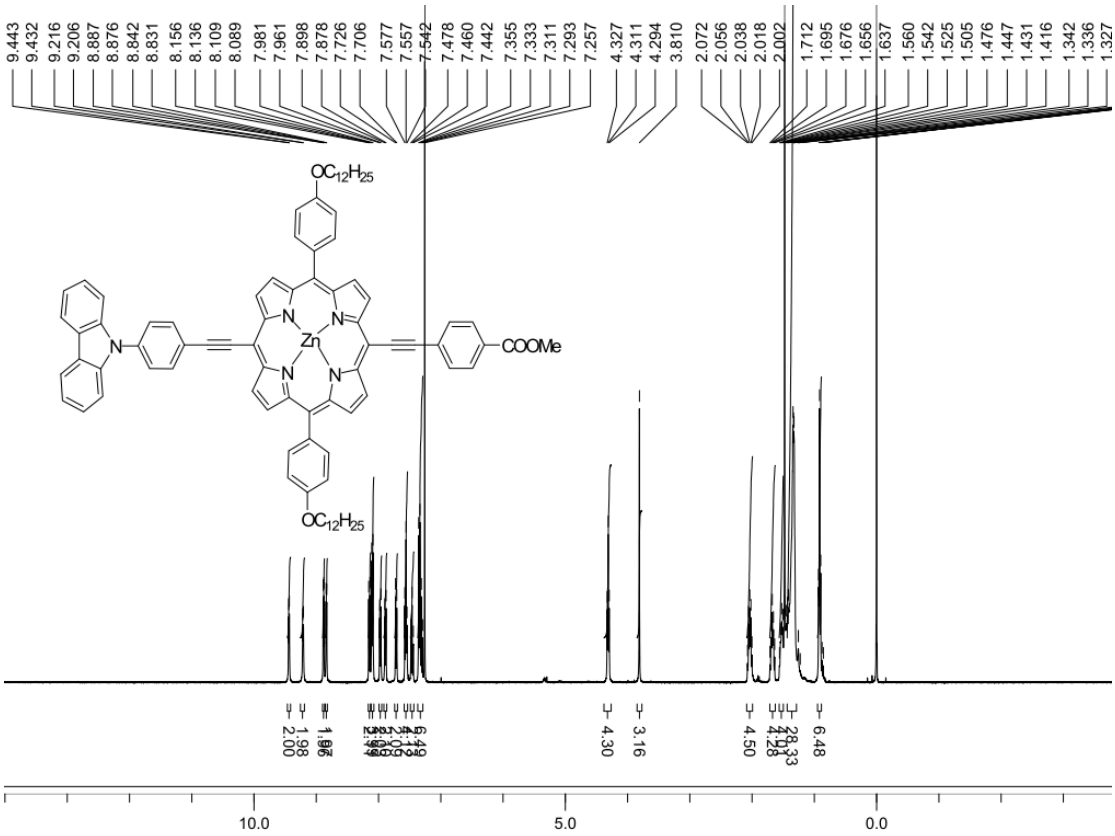

Fig. S12 The ^{1}H NMR spectrum of **6a** in $CDCl_3$

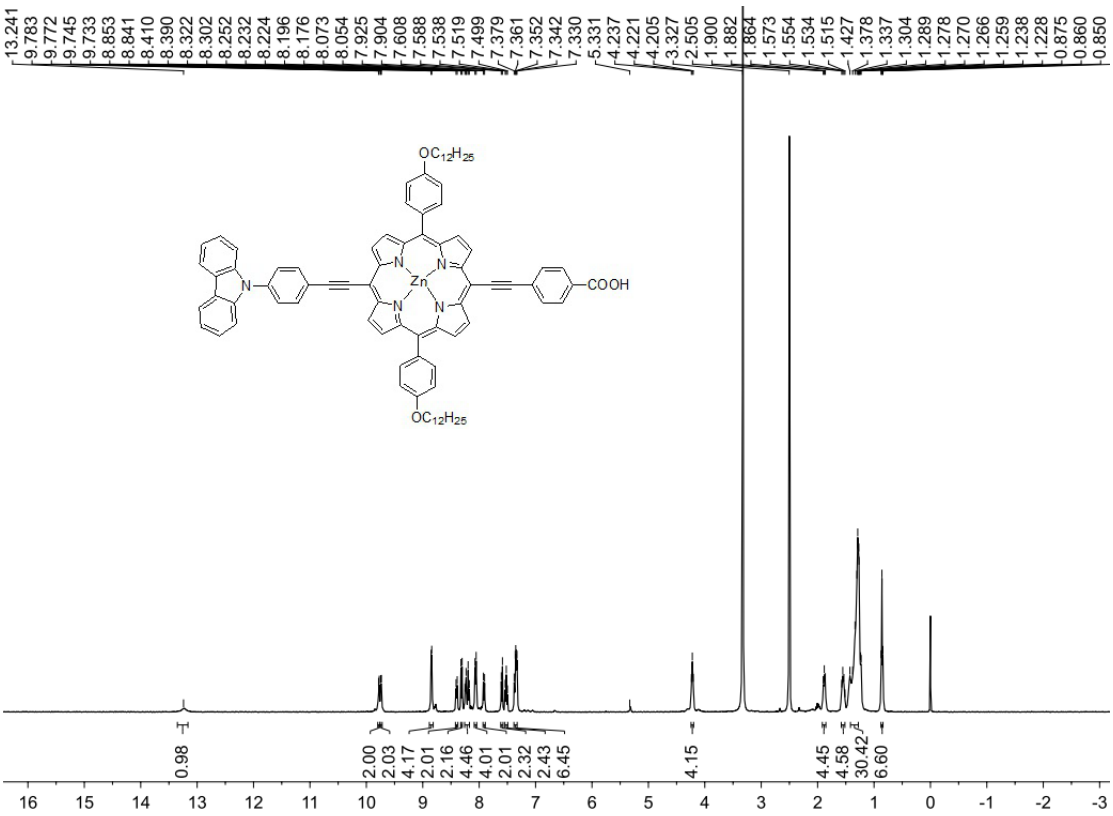

Fig. S13 The ^{1}H NMR spectrum of **Q1** in DMSO-d_6

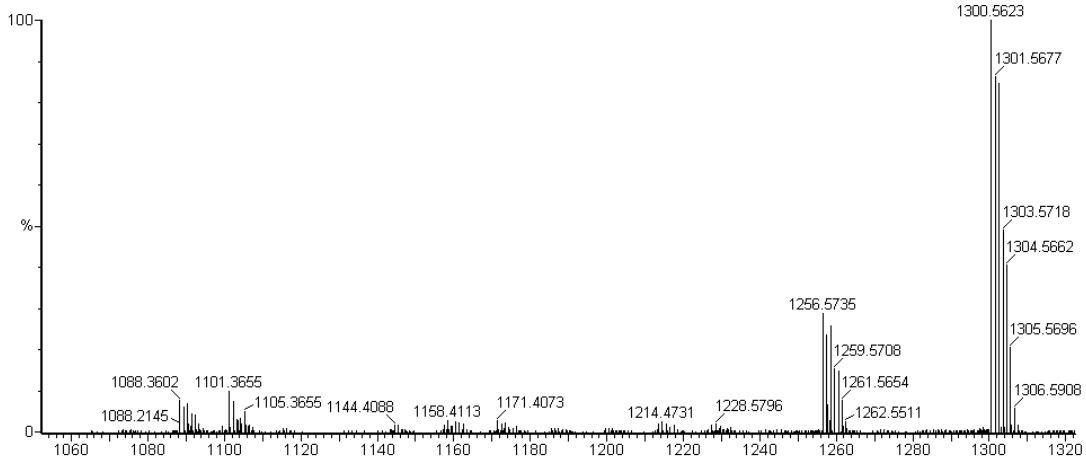

Fig. S14 HRMS of **Q1** in MeOH

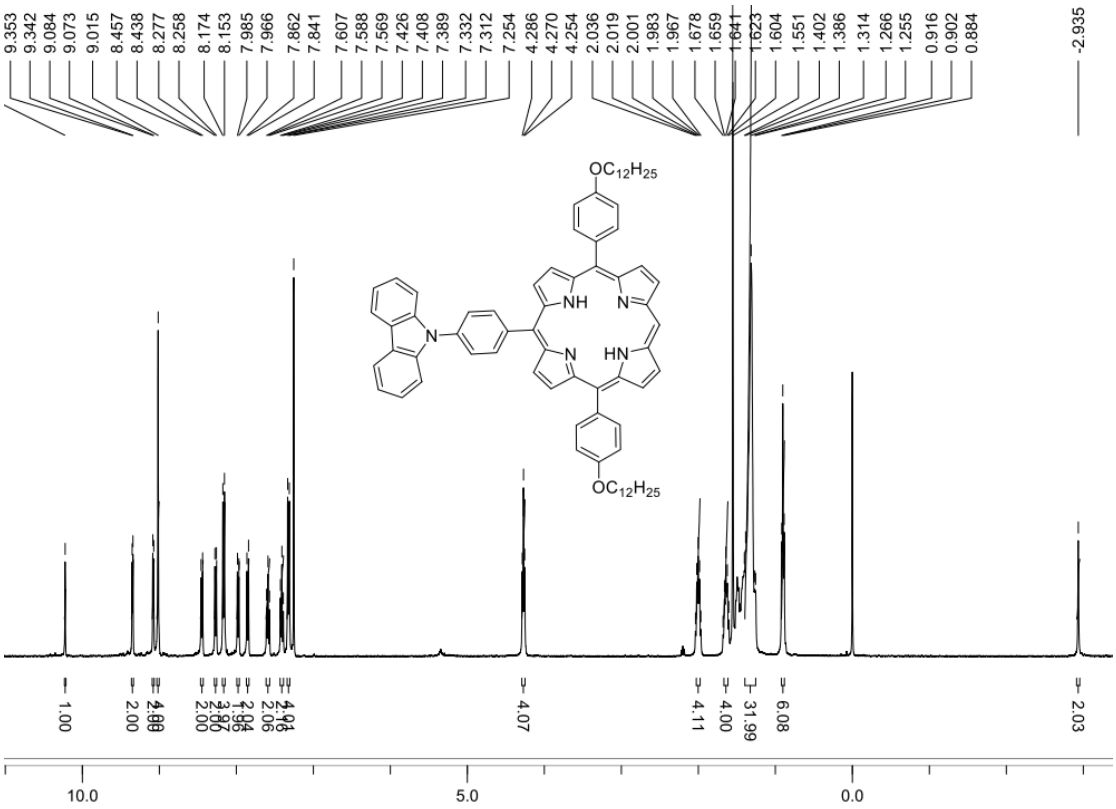

Fig. S15 The ^{1}H NMR spectrum of **2b** in $CDCl_3$

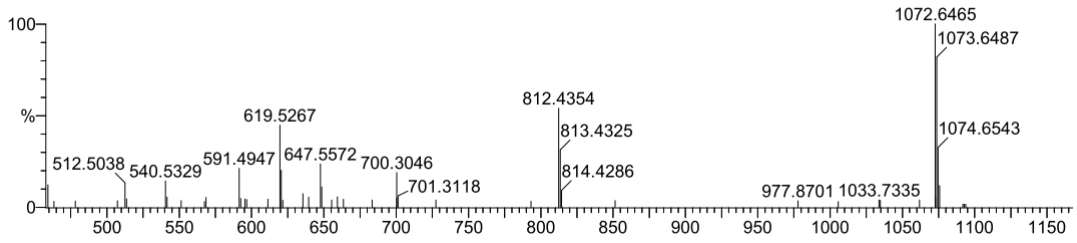

Fig. S16 HRMS of **2b** in MeOH

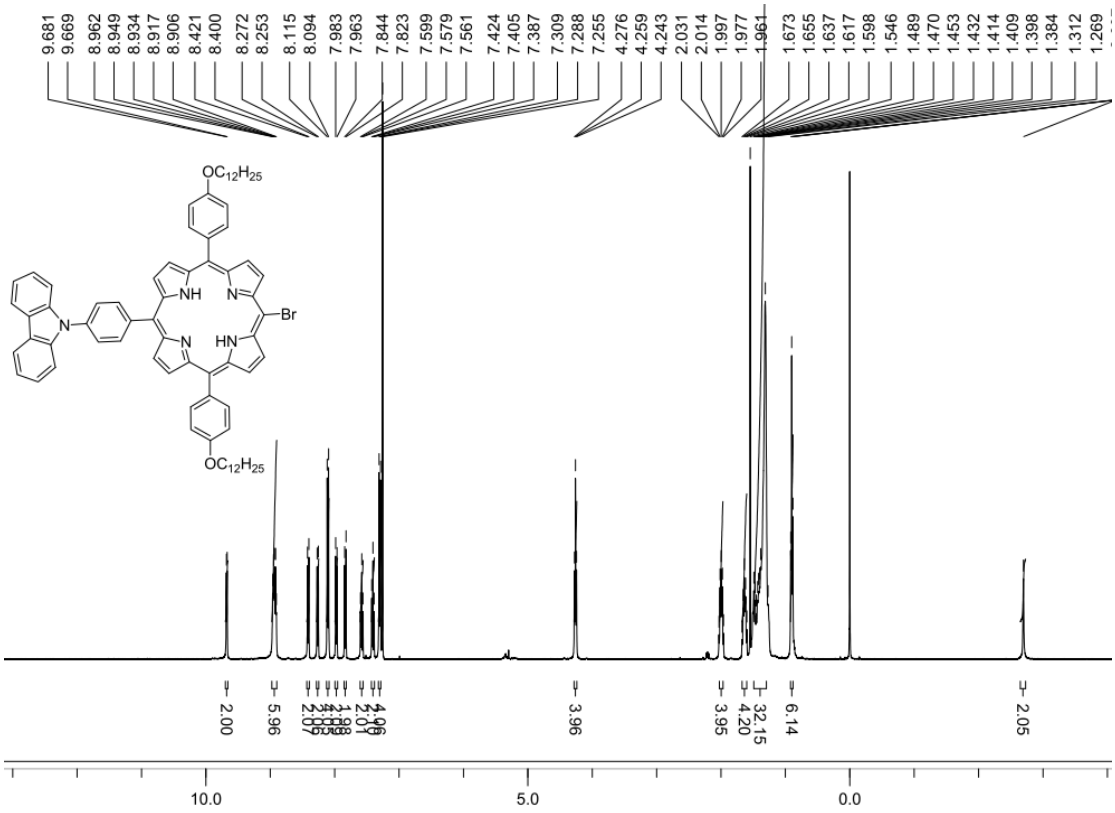

Fig. S17 The ^{1}H NMR spectrum of **3b** in $CDCl_3$

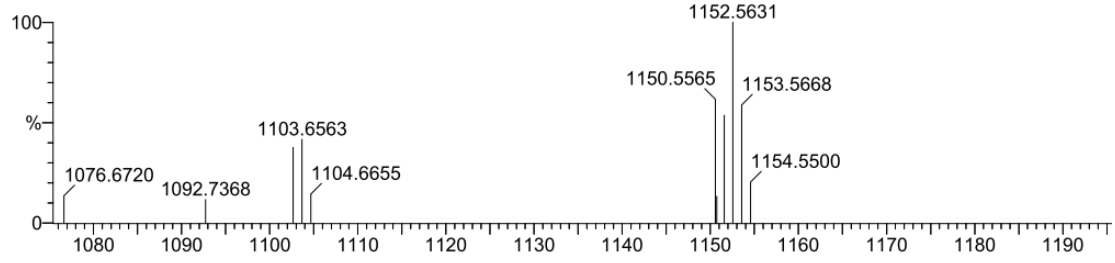

Fig. S18 HRMS of **3b** in MeOH

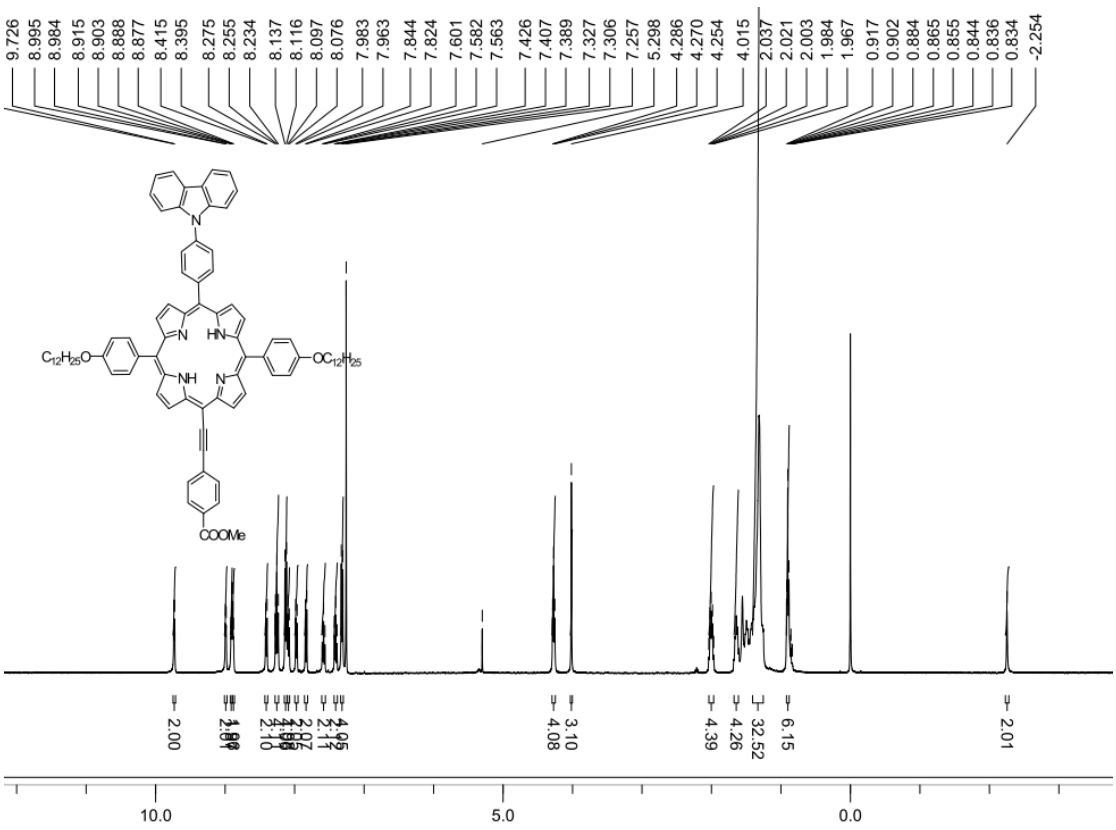

Fig. S19 The ^{1}H NMR spectrum of **5b** in $CDCl_3$

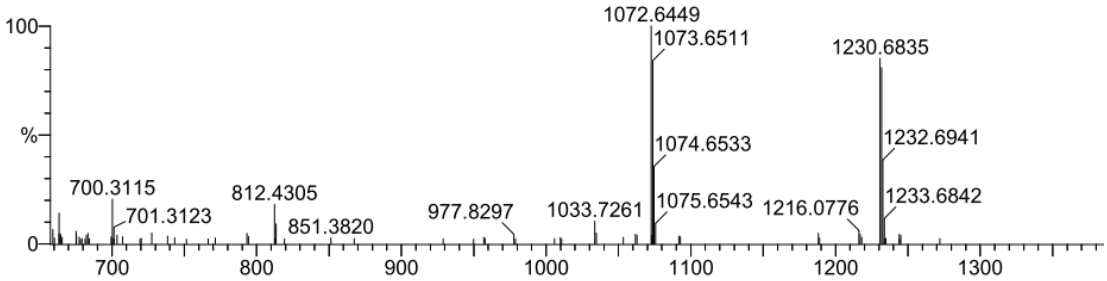

Fig. S20 HRMS of **5b** in MeOH

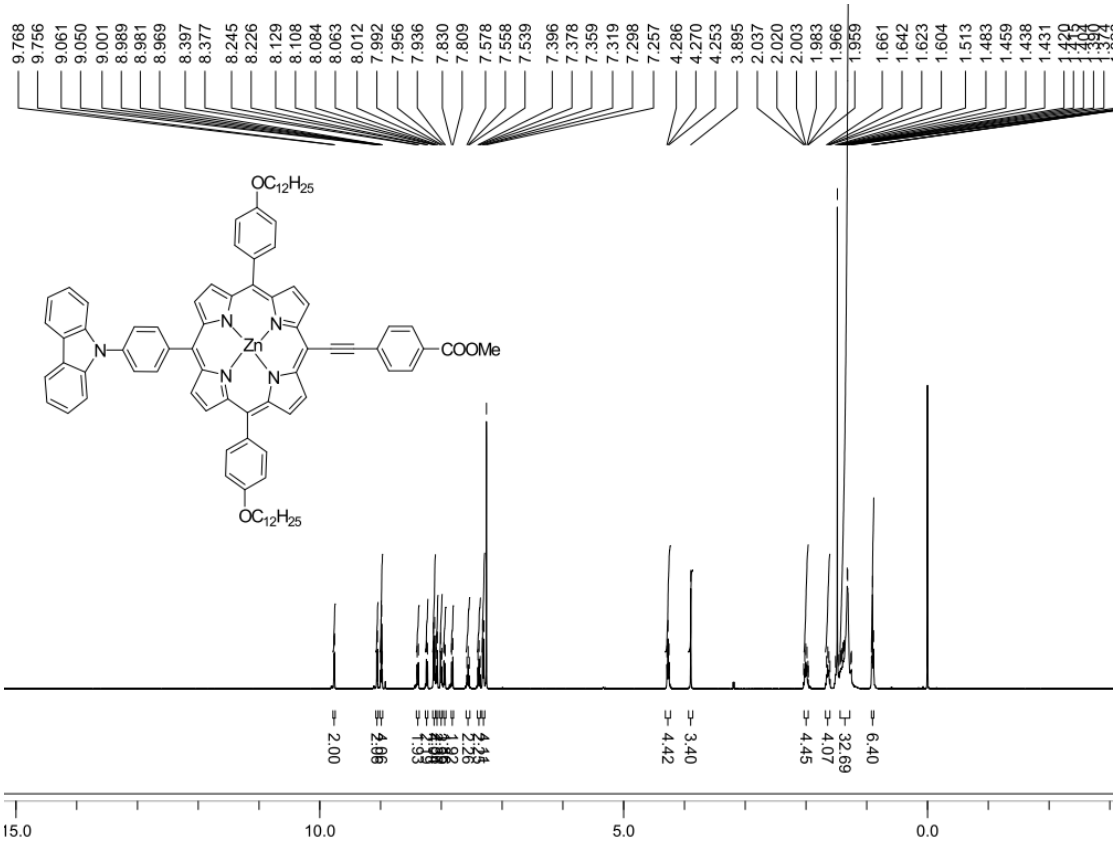

Fig. S21 The ^{1}H NMR spectrum of **6b** in $CDCl_3$

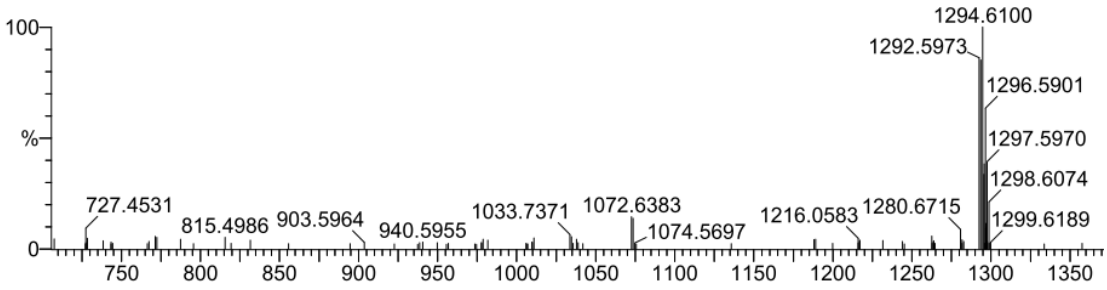

Fig. S22 HRMS of **6b** in MeOH

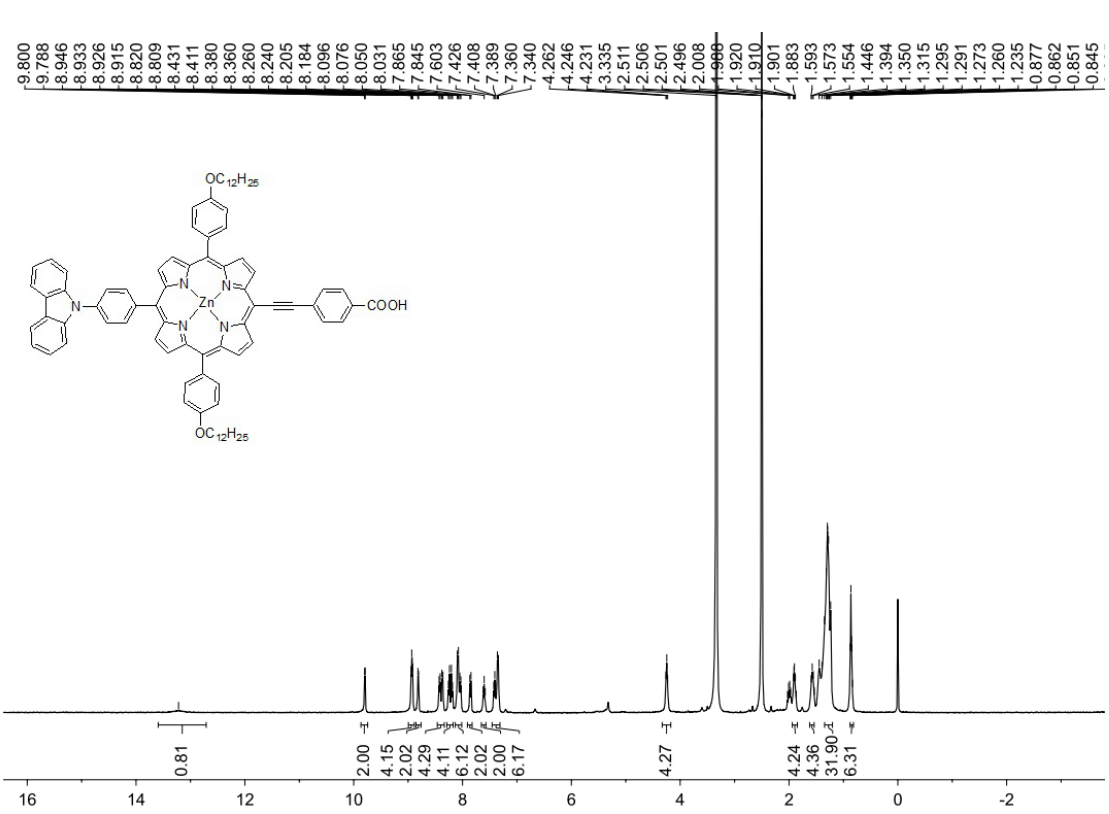

Fig. S23 The ^{1}H NMR spectrum of **Q2** in DMSO-d_6

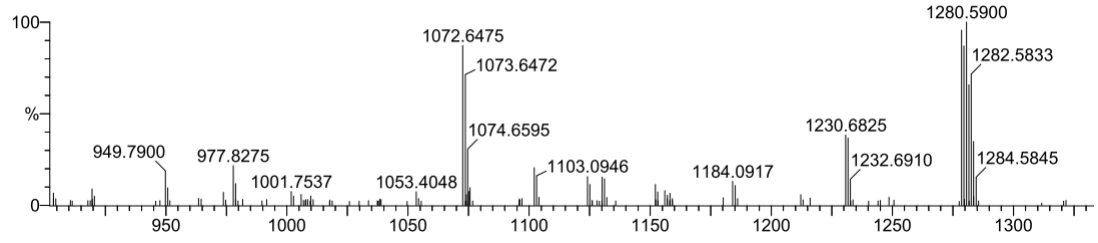

Fig. S24 HRMS of **Q2** in MeOH

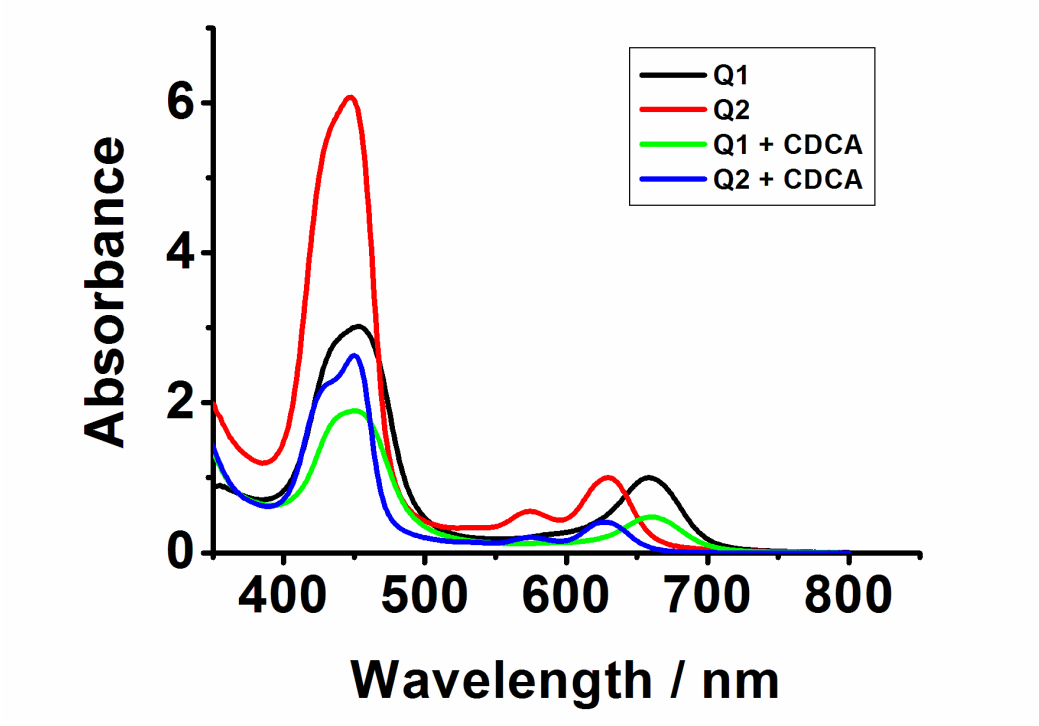

Fig. S25 Absorption spectra of porphyrin-sensitized TiO_2 films with or without CDCA.