



Supporting Information

for

The B & B approach: Ball-milling conjugation of dextran with phenylboronic acid (PBA)-functionalized BODIPY

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Methods for UV–vis and fluorescence measurements, UV–vis and fluorescence spectra of Dex-1b, Dex-1c, and 1 in DMSO, FTIR spectra of PBA-BODIPY 1, dextran and Dex-1a–d; MTT assay and correlation coefficient of Dex-1b

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UV-vis and fluorescence measurements

The amount of unconjugated dye in the ethanol washing solutions was analyzed as follows: the ethanol filtrate was concentrated to dryness, then, the filtrate was dissolved in DMSO in a volumetric flask and the absorbance (Abs) of the obtained solutions at $\lambda_{\max} = 508\text{--}514\text{ nm}$ was measured.

Detailed dilution protocol

Washing solutions of **Dex-1a** were diluted as follow using DMSO:

- DMSO solution was firstly diluted to 50 mL, then 1 mL of this solution was diluted to 50 mL.
- The filtrate related to the first washing solution was dissolved in 100 mL.
- The filtrate related to the second washing solution was dissolved in 50 mL.

Washing solutions of **Dex-1b-c** were diluted as follow using DMSO:

- DMSO solution was firstly diluted to 50 mL, then 1 mL of this solution was diluted to 50 mL.
- The filtrate related to the first washing solution was dissolved in 100 mL.
- The filtrate related to the second washing solution was dissolved in 20 mL.

For the dilution curves a note amount of BODIPY-Dex was dissolved in a note amount of water and dilutions were prepared from the stock solution.

Fluorescence spectra were recorded at $\lambda_{\text{exc}} = 380\text{ nm}$ or $\lambda_{\text{exc}} = 460\text{ nm}$.

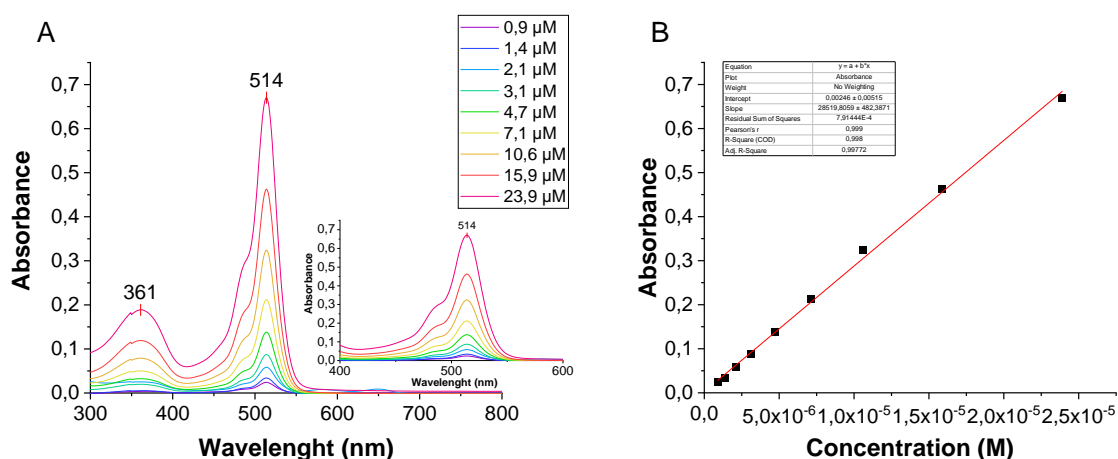


Figure S1: A. UV-vis absorbance spectra of PBA-BODIPY 1 in DMSO; B. Evaluation of the molar extinction coefficient of PBA-BODIPY 1 in DMSO.

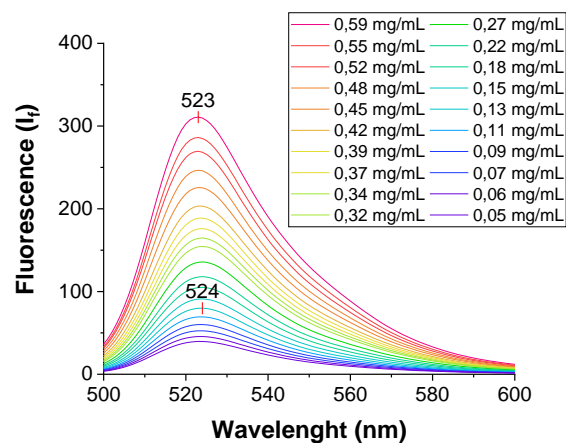


Figure S2: Fluorescence emission spectra of **Dex-1b** ($\lambda_{\text{exc}} = 460$ nm) in water.

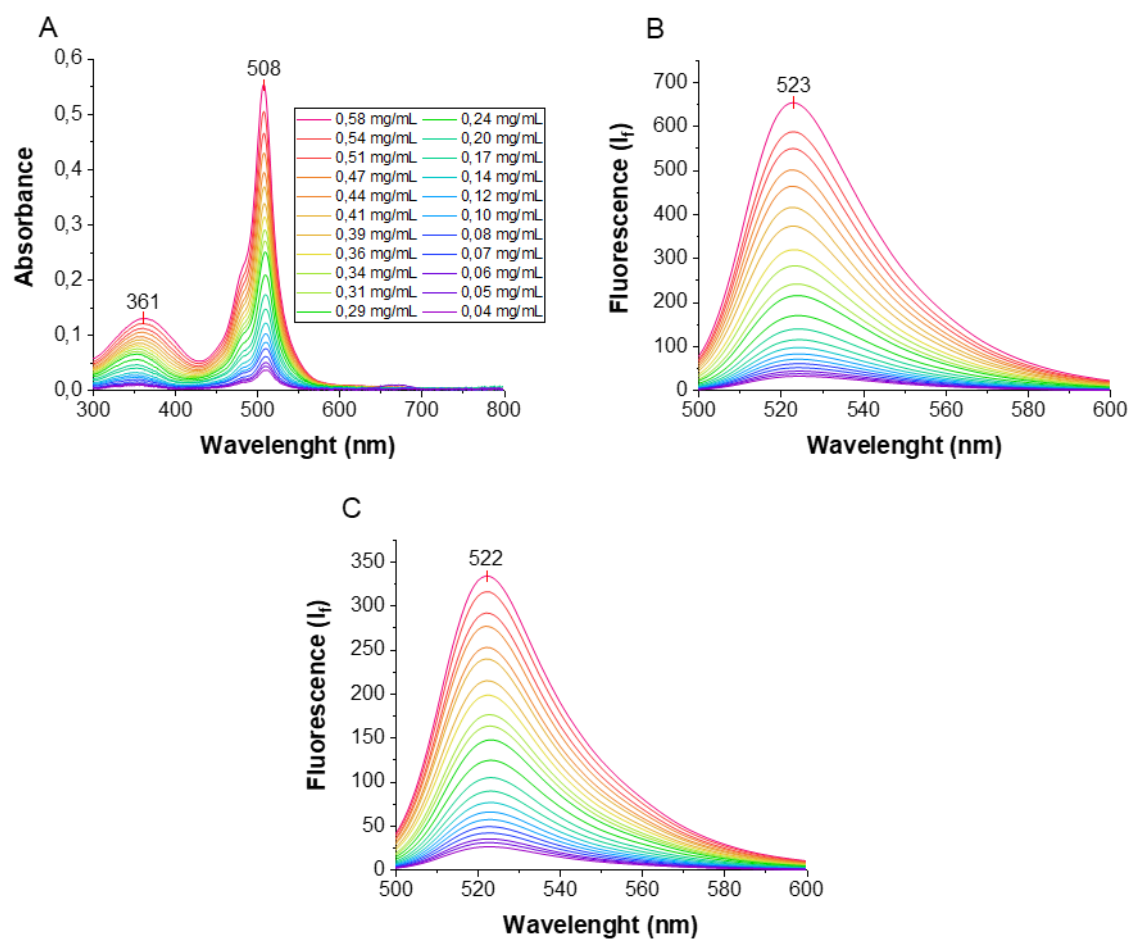


Figure S3: A. UV-vis absorbance spectra and B and C. Fluorescence spectra ($\lambda_{\text{exc}} = 380$ nm B and $\lambda_{\text{exc}} = 460$ nm C) of **Dex-1c** solution in water.

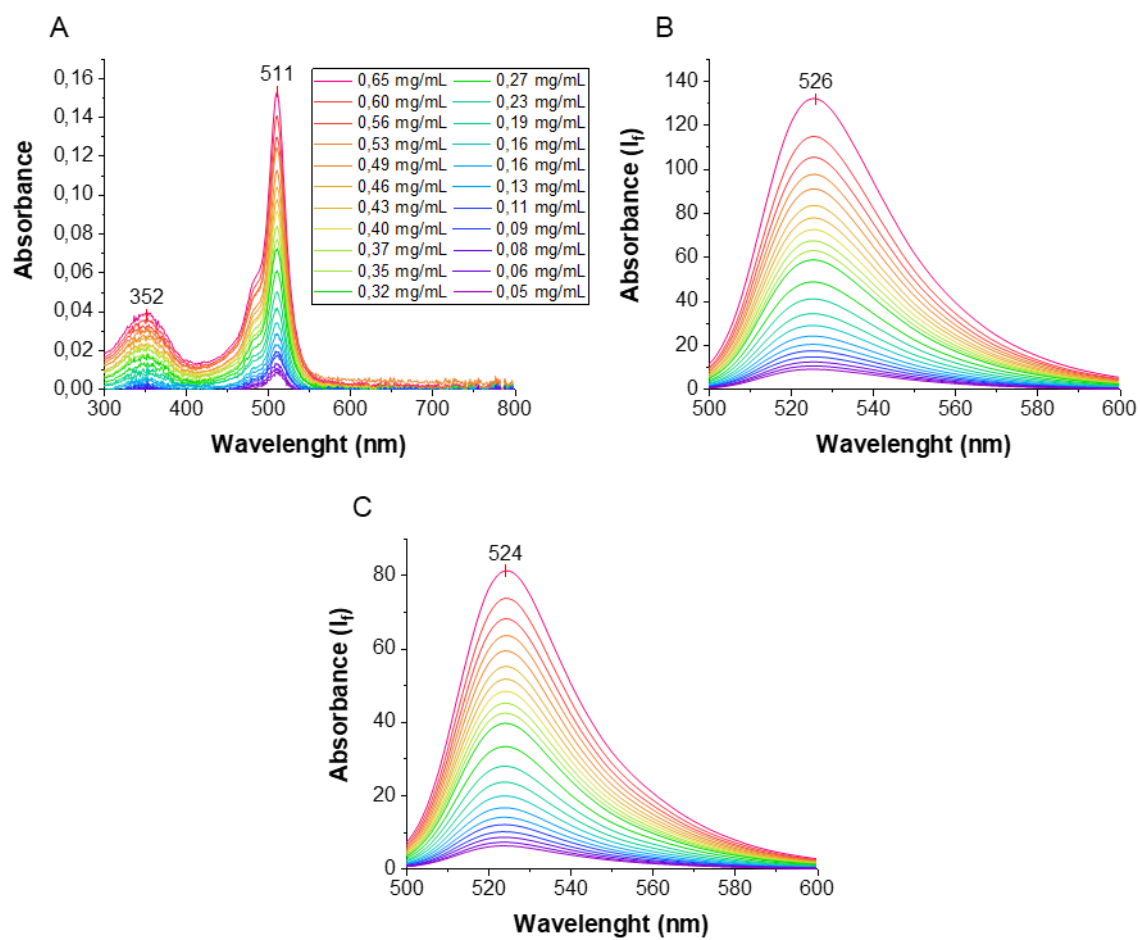


Figure S4: A. UV-vis absorbance spectra and B and C. Fluorescence spectra ($\lambda_{\text{exc}} = 380$ nm B and $\lambda_{\text{exc}} = 460$ nm C) of **Dex-1d** solution in water.

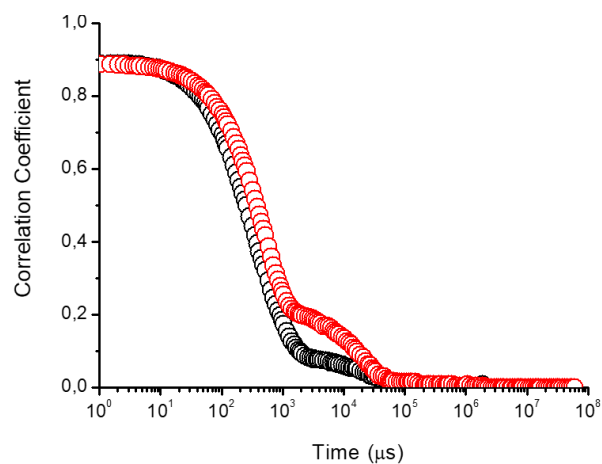


Figure S5: Correlation coefficient by DLS measurements of the conjugate **Dex-1b** (1.0 mg/mL) dispersed in H₂O (black curve) and PBS (red curve).

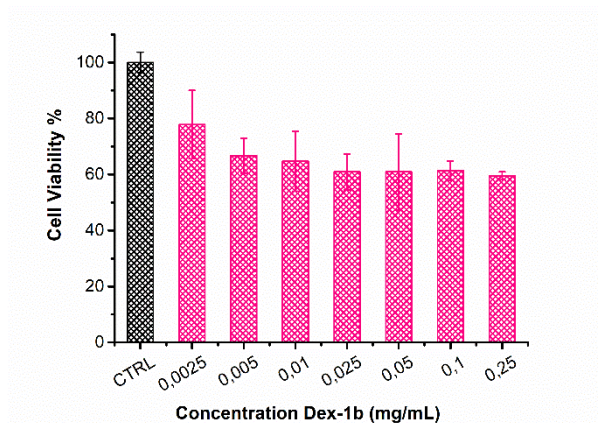


Figure S6: Percentage of cell viability of A549 cells after 24 hours of exposure at various concentrations of the conjugate **Dex-1b** reported as mg/mL concentration of functionalized polymer.

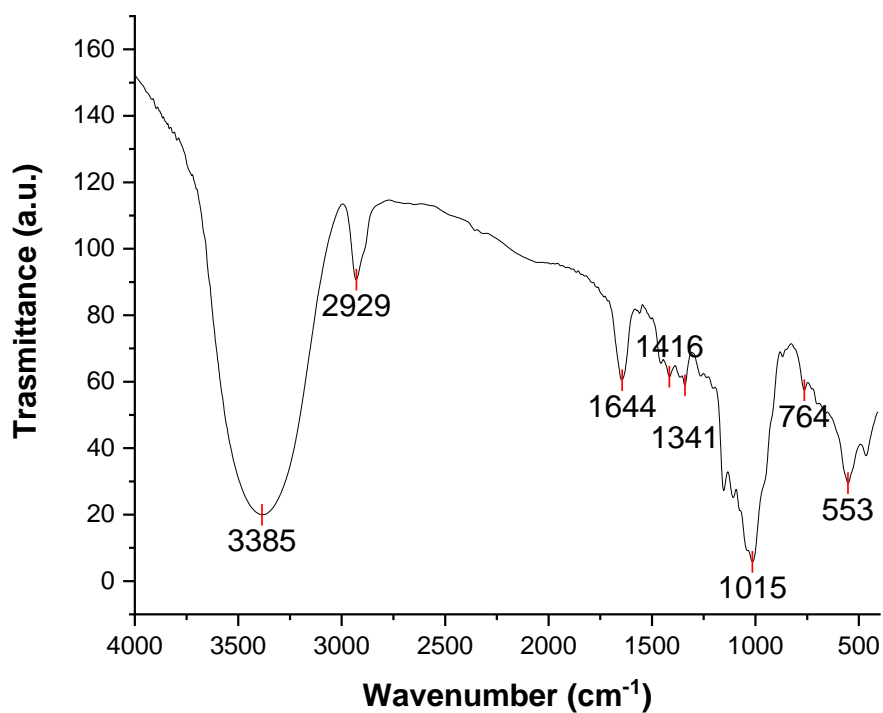


Figure S7: FTIR spectrum of **Dex-1a**.

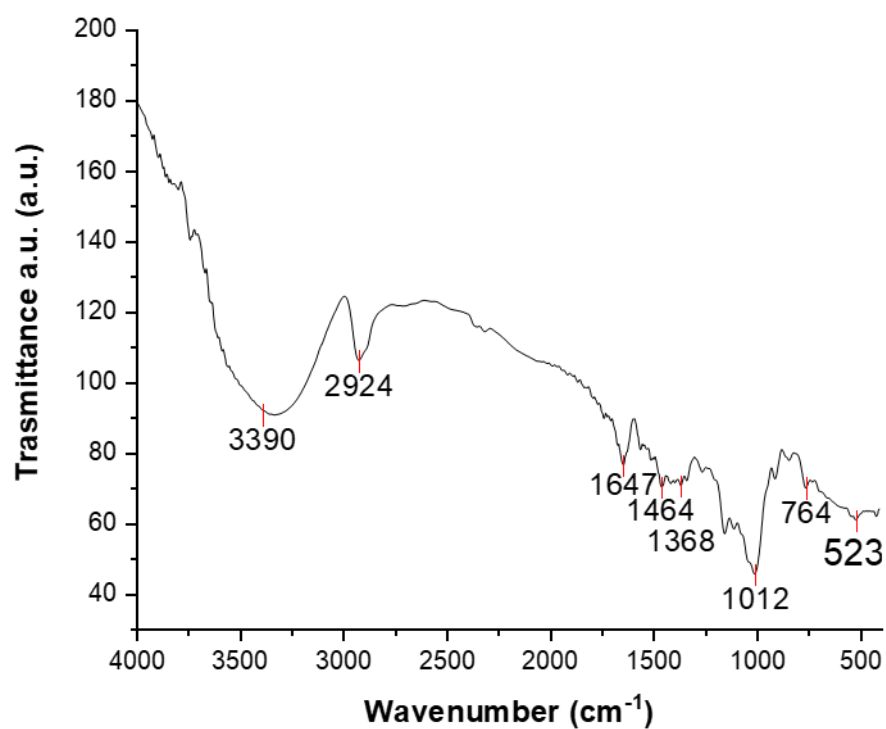


Figure S8: FTIR spectrum **Dex-1b**.

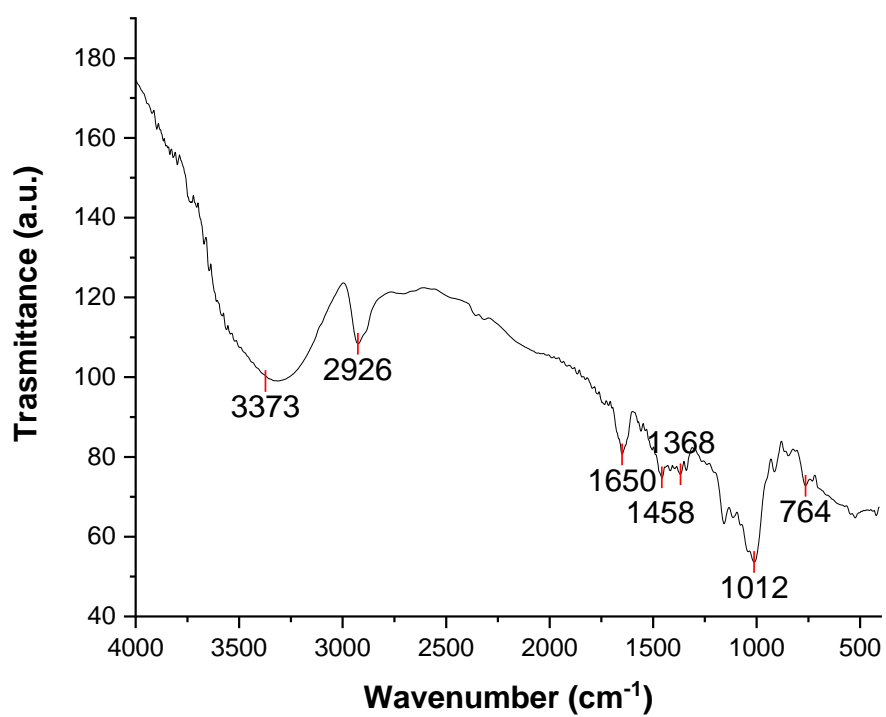


Figure S9: FTIR spectrum of **Dex-1b**.

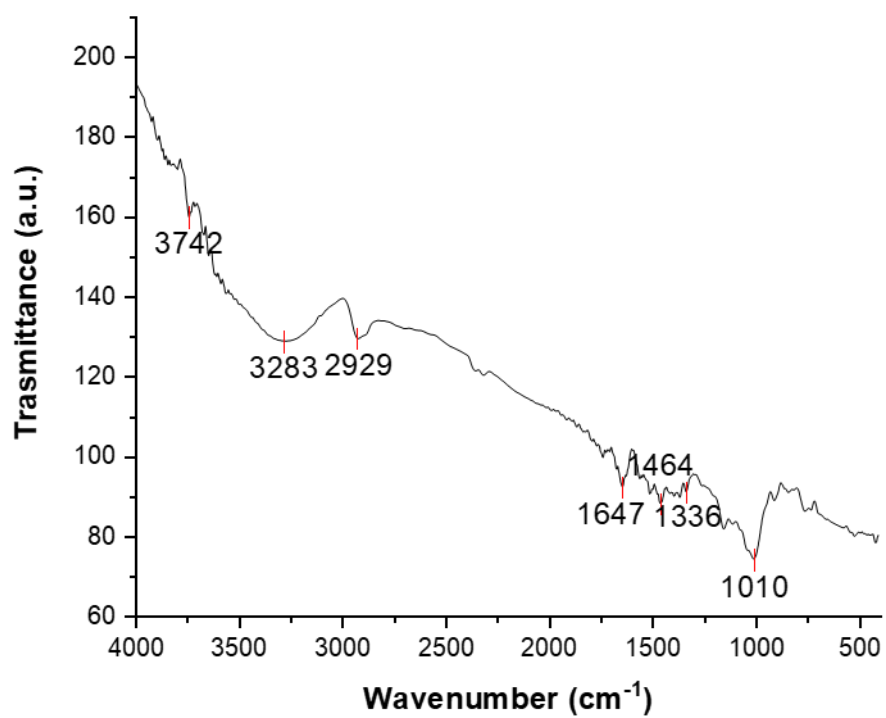


Figure S10: FTIR spectrum of **Dex-1d**.

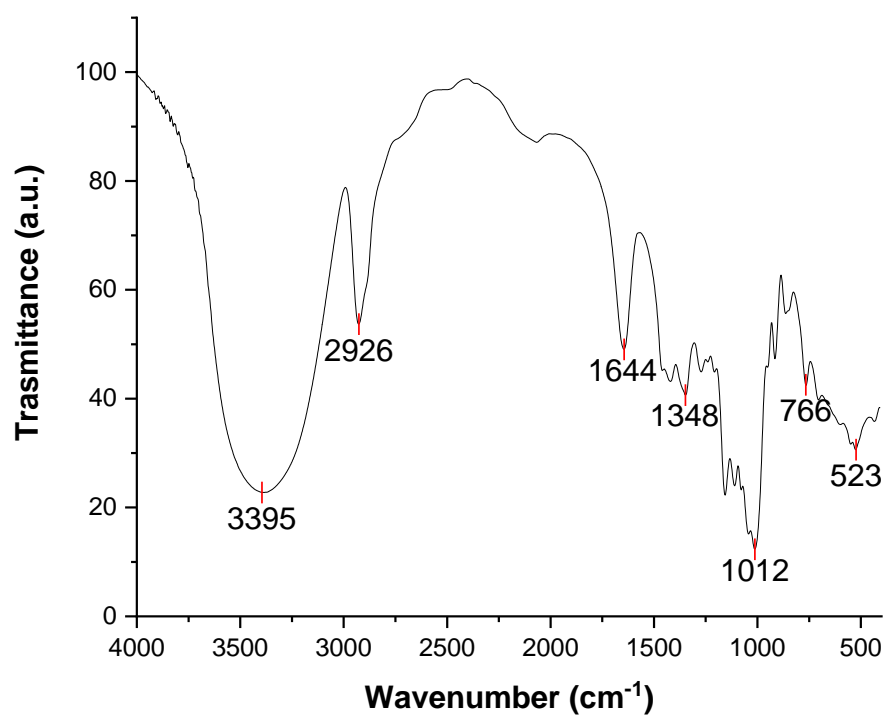


Figure S11: FTIR spectrum of dextran.

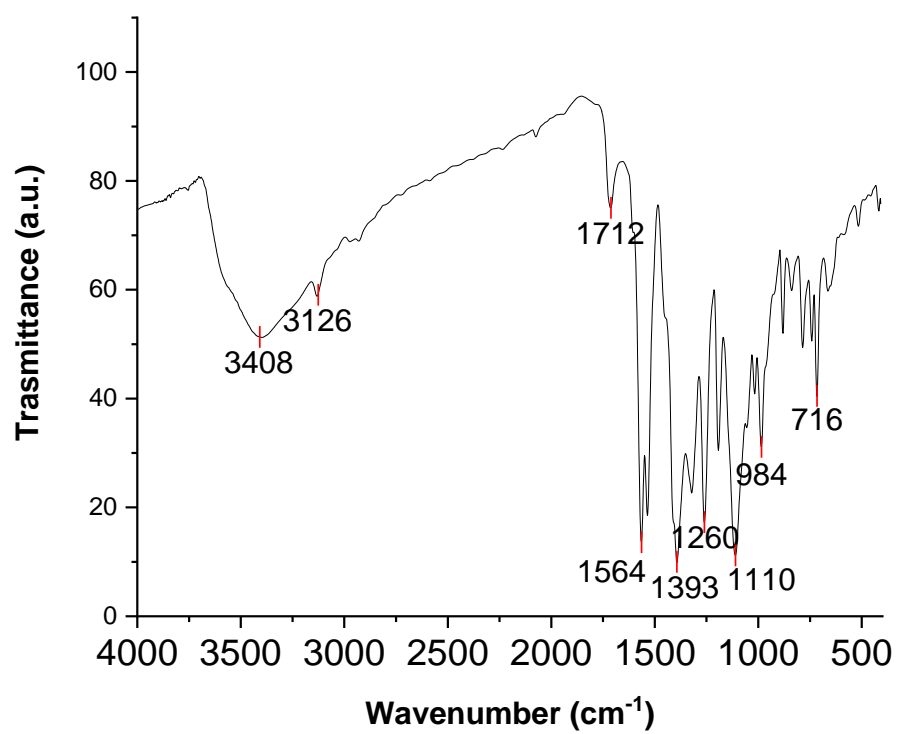


Figure S12: FTIR PBA-BODIPY 1.