Supporting Information

Trehalose-Based Nucleolipids as Nanocarriers for Autophagy Modulation: An In Vitro Study

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IR spectroscopy

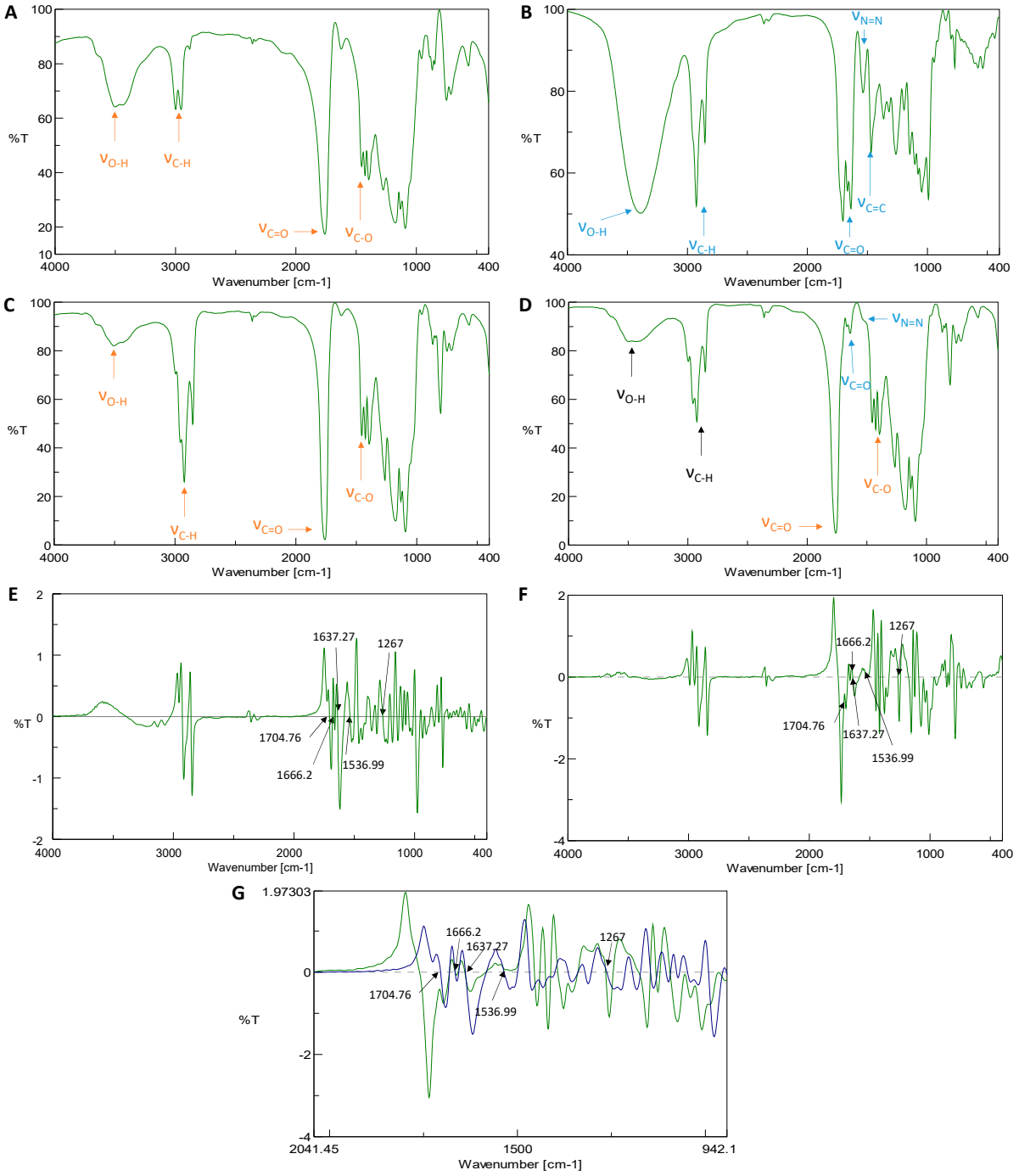

Figure S1. Infrared analysis of PLGA, GNL, and (un)loaded PLGA NPs. IR spectra of (**A**) PLGA, (**B**) GNL, (**C**) F2 and (**D**) F4, acquired in transmission mode. First derivative of (**E**) GNL, (**F**) F4 (Savitzky-Golay: Derivative order 1, Polynomic order 2 and window of 7 points) and (**G**) zoom of both first derivatives.

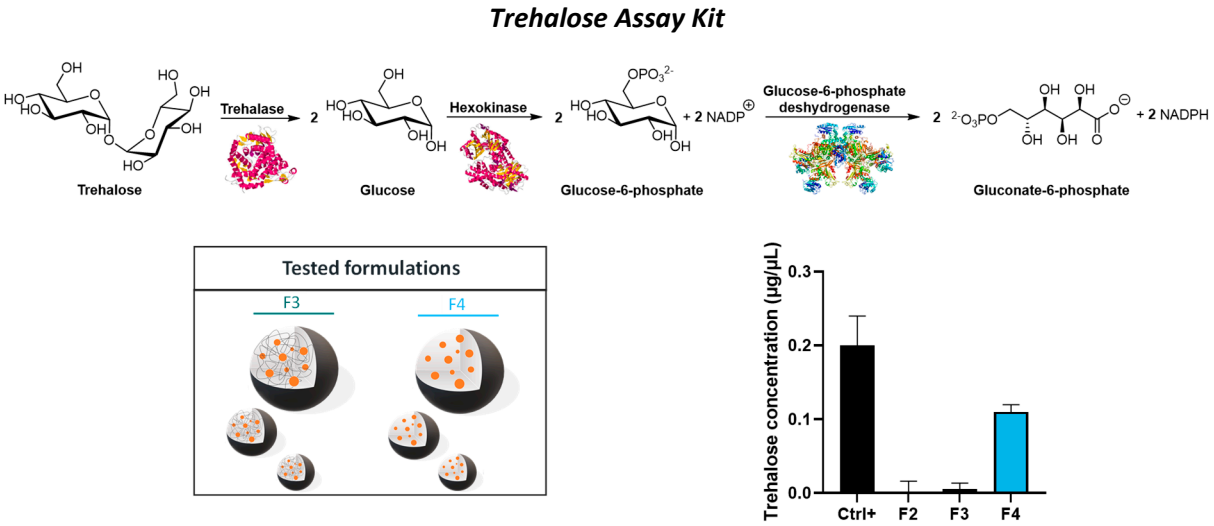

Figure S2. Principle of the enzymatic determination of trehalose. Enzymatic degradation of trehalose allowing the quantification of non-encapsulated GNL by UV spectroscopy.

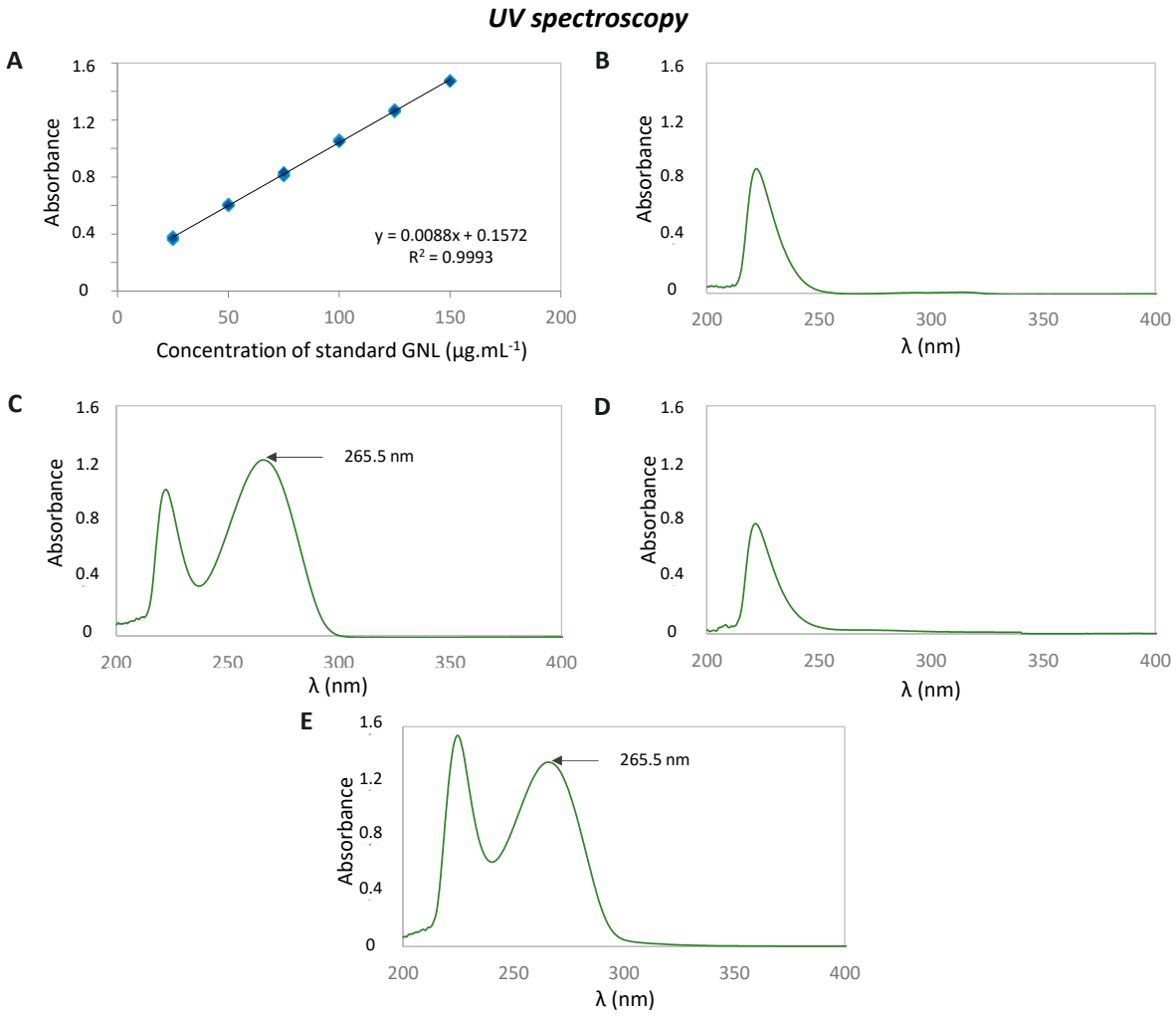

Figure S3. UV spectroscopy assays. (**A**) Calibration curve of GNL in methanol (concentration: 0.5 to 40 µg.ml^{-1}; absorbance at 266.5 nm). UV spectra of (**B**) PLGA, (**C**) GNL, (**D**) F2 and (**E**) F4.

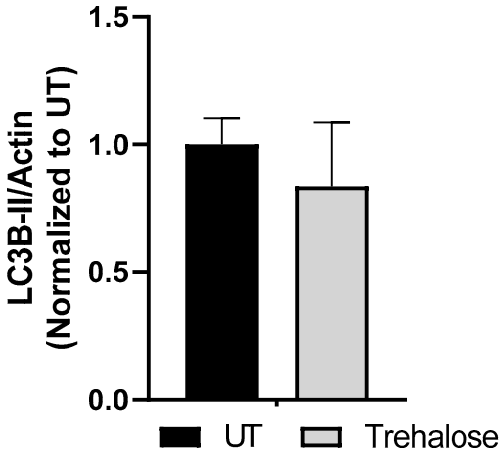

Figure S4. Biological evaluation of the condition of trehalose at the same concentration contained in the nanovectors. Quantification of LC3 protein levels normalized by actin in BE (2)-M17 cells treated with molecular trehalose for 24 h (n= 3).