

Supplementary information

Synthesis of lutein esters using novel biocatalyst of *Candida antarctica* lipase B covalently immobilized on functionalized graphitic carbon nitride nanosheets

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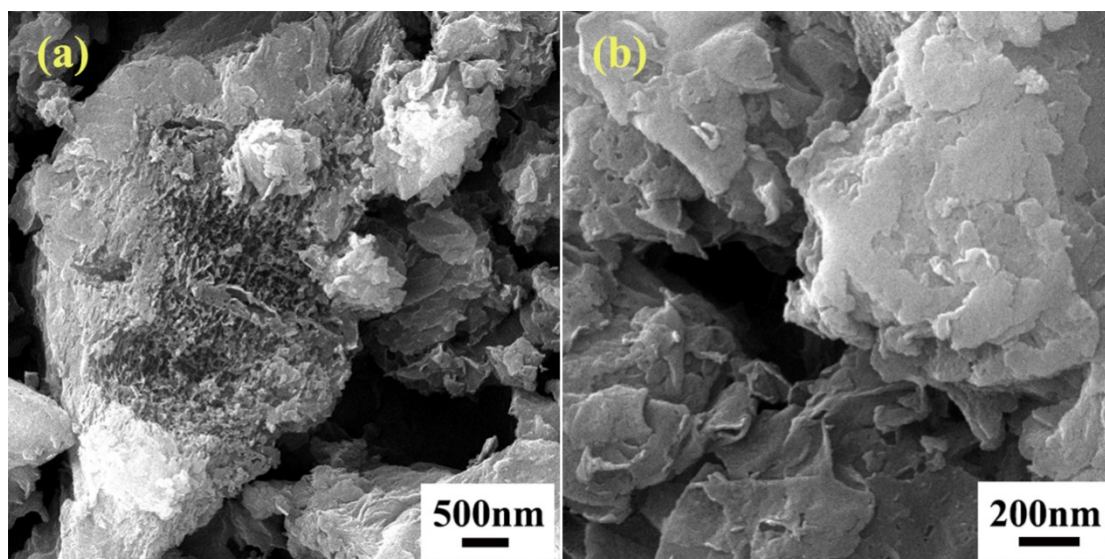


Fig. S1. SEM images of bulk g-C₃N₄ (a) and g-C₃N₄-Ns (b).

Table S1. The surface area, pore width and pore volume of samples.

Samples	Surface area (m ² g ⁻¹)	Pore width (nm)	Pore volume (cc g ⁻¹)
g-C ₃ N ₄ -Ns	118.858	3.794	0.444
g-C ₃ N ₄ -Ns-PEI	54.005	3.058	0.332
g-C ₃ N ₄ -Ns-PEI-GA	26.947	3.060	0.232
g-C ₃ N ₄ -Ns-PEI-GA@CALB	14.163	2.897	0.178

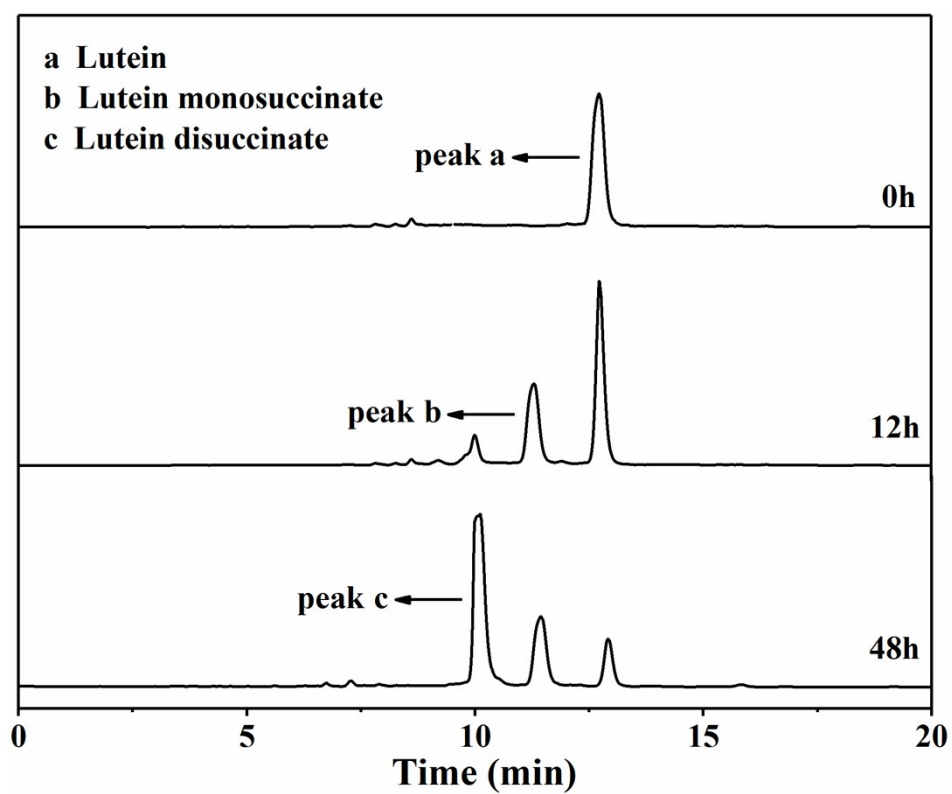


Fig. S2. Liquid chromatography spectra of lutein and lutein esters products.

Table S2. Effect of different organic solvents on the lutein disuccinate conversion rate at 45 °C in 48 h.

Solvent	Conversion rate (%)
Acetone	7.12
Acetonitrile	14.58
Chloroform	56.46
DMF	64.32
DMSO	42.07
Hexyl alcohol	0
MTBE	34.06
N-butyl alcohol	0
Toluene	47.72