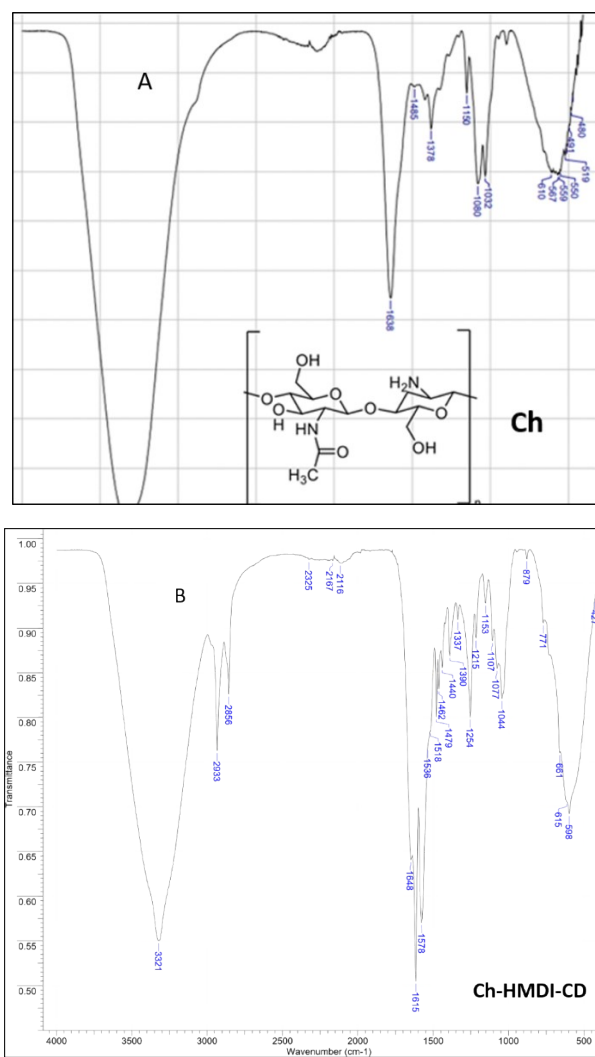


Supplementary Information

Use of supramolecular chemistry based on β -cyclodextrin-grafted chitosan beads to prepare biocatalytic materials

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Figure S1. IR spectra of chitosan (Ch) and β -cyclodextrin-grafted chitosan beads. A) Ch, B) Ch-HMDI-CD, C) Ch-XDI-CD, D) Ch-TDI-CD.



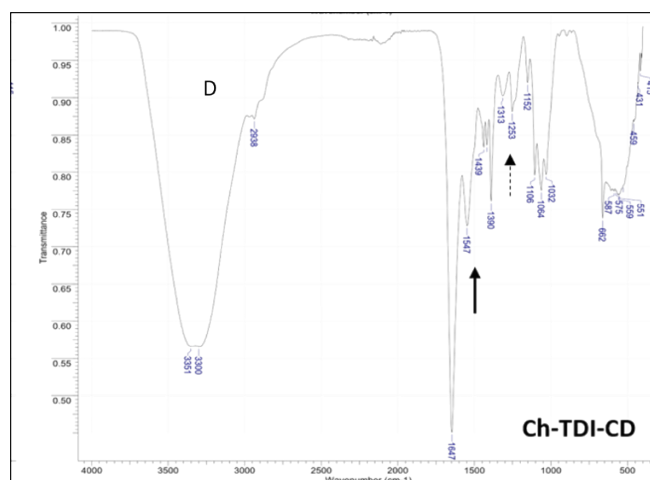
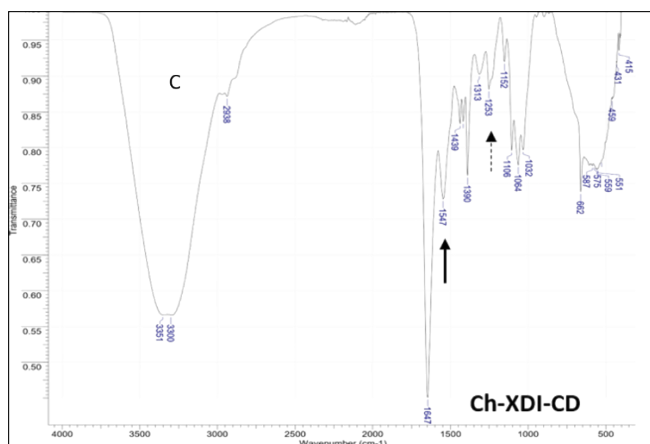


Table S1.- Activity of galactosidases, HRP and GOx before and after the introduction of adamantane (ada) group.

Time (hours)	Activity (%) β -galactosidase <i>E. coli</i>	Activity (%) β -galactosidase from <i>B. bifidum</i> (Saphera)	Activity (%) HRP	Activity (%) GOx
0	100	100	100	100
5	60	55	80	75
24	42	38	50	40

Table S2.- Reusability of the Ch-CD bead • ada- β -Gal

Residual activity of Ch-CD bead • ada- β -Gal (%)						
β -Gal (<i>E. coli</i>)			β -Gal (<i>B. bifidum</i>)			
Cycles	Linkers					
	HMDI	XDI	TDI	HMDI	XDI	TDI
1	100	100	100	100	100	100
2	86	86	100	52	58	59
3	67	67	81	25	23	24
4	56	56	54	17	15	13
5	40	40	45	12	11	17

Table S3.- Thermal stability of immobilized- β -galactosidases at -4°C and 20°C.

Time (day)	Residual activity (%)	
	Ch-CD bead • ada- β -Gal from <i>E coli</i> at -4°C (20°C)	Ch-CD bead • ada- β -Gal from <i>B bifidum</i> at -4°C (20°C)
0	100 (100)	100 (100)
1	100 (95)	100 (92)
3	100 (90)	97 (90)
5	100 (87)	95 (85)
10	99 (85)	90 (82)
14	99 (83)	80 (80)

Table S4. Reusability of the biocatalytic material.

Cycles	TDI
1	100
2	96
3	90
4	87
5	85