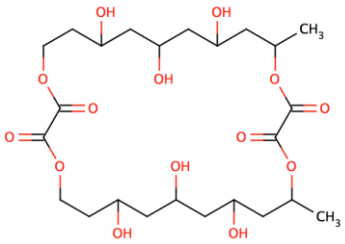
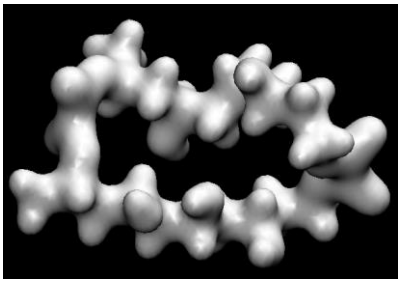
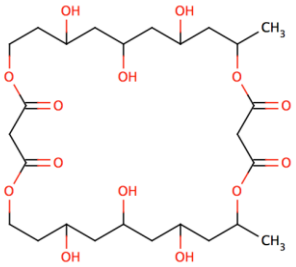
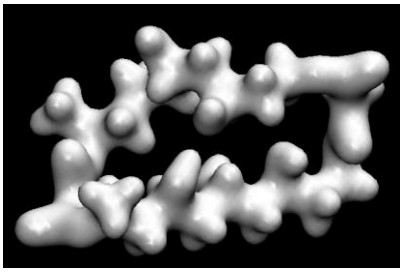
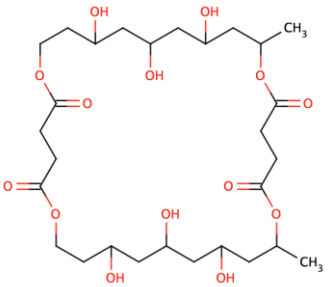
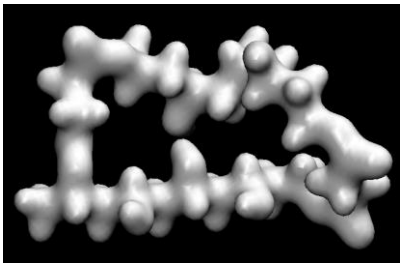
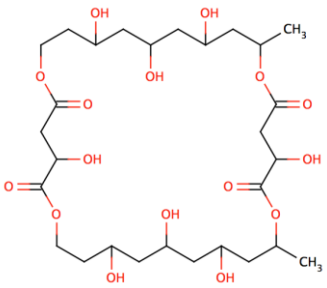
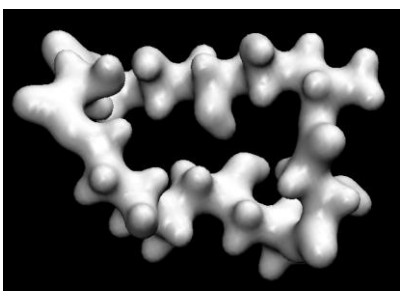
pharmaceutics

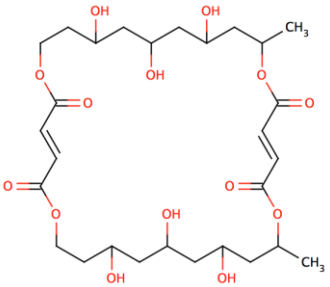
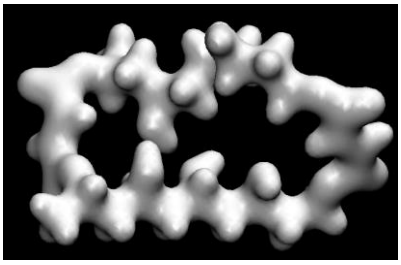
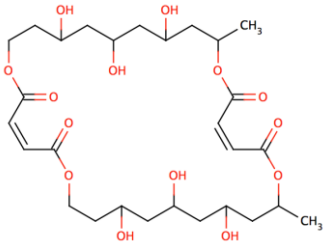
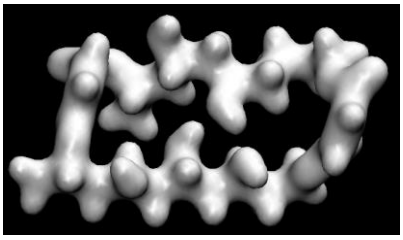
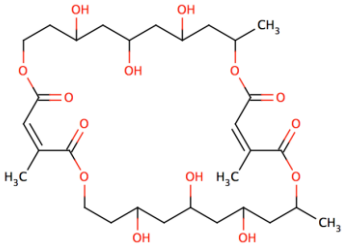
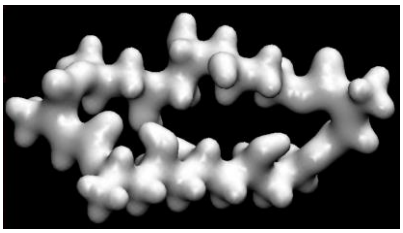
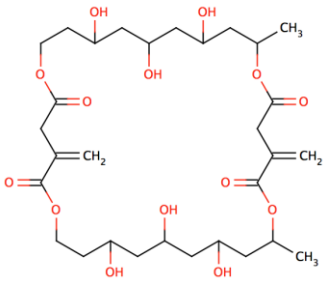
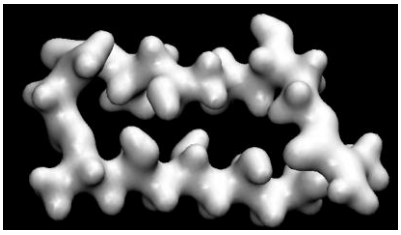
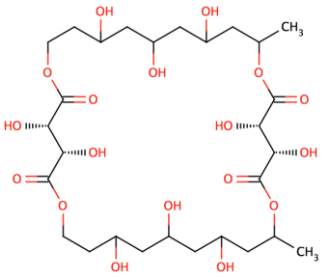
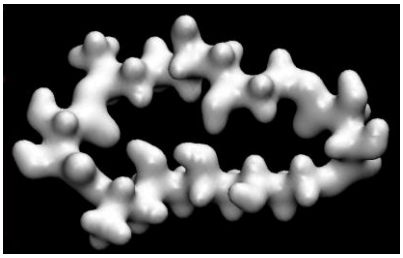
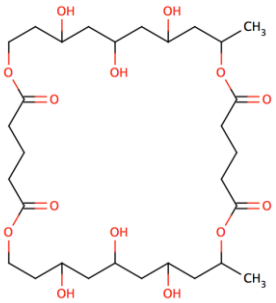
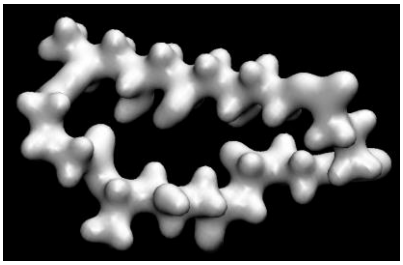
MDPI

Supplementary Materials: Film Dressings Based on Hydrogels: Simultaneous and Sustained-Release of Bioactive Compounds with Wound Healing Properties

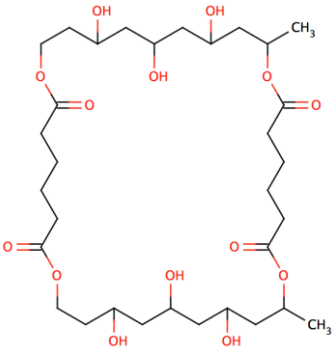
Fabián Avila-Salas, Adolfo Marican, Soledad Pinochet, Gustavo Carreño, Oscar Valdés, Bernardo Venegas, Wendy Donoso, Gustavo Cabrera-Barjas, Sekar Vijayakumara, Esteban F. Durán-Lara

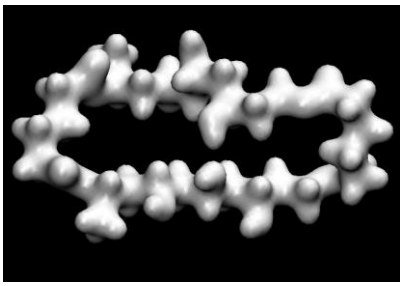
Table S1. Design of PVA hydrogel nanopores (Hnp) crosslinked with different dicarboxylic acids.

Id.	Hydrogel Nanopores (Hnp)	2D Structure of Hydrogel Nanopores (Hnp)	3D Structure of Hydrogel Nanopores (Hnp)
1	PVAnp-Oxalic acid		
2	PVAnp-Malonic acid		
3	PVAnp-Succinic acid		
4	PVAnp-Malic acid		

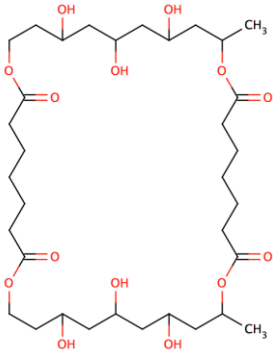
5	PVAnp-Fumaric acid		
6	PVAnp-Maleic acid		
7	PVAnp-Citraconic acid		
8	PVAnp-Itaconic acid		
9	PVAnp-Tartaric acid		
10	PVAnp-Glutaric acid		

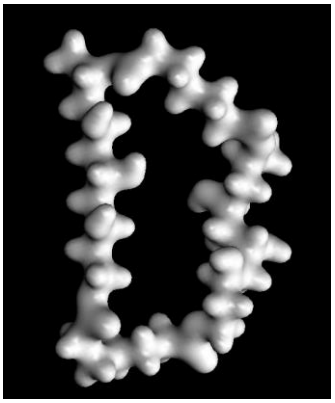
11 PVAnp-Adipic acid



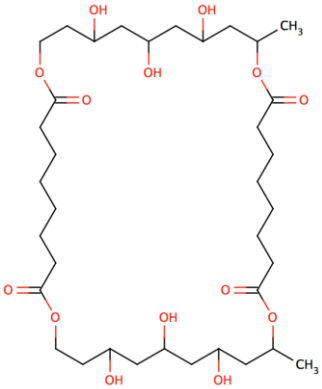


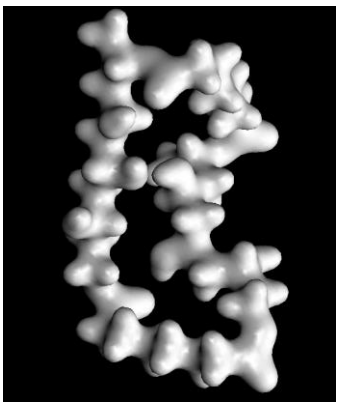
12 PVAnp-Pimelic acid



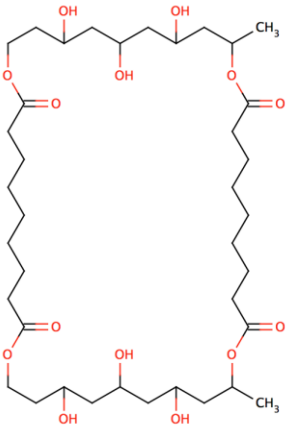


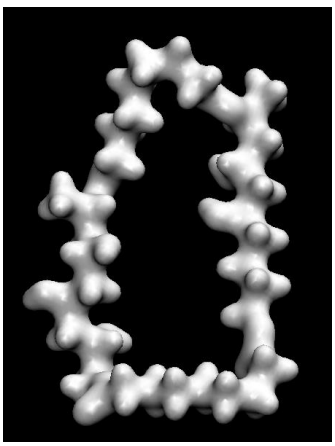
13 PVAnp-Suberic acid



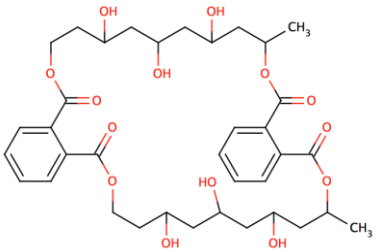


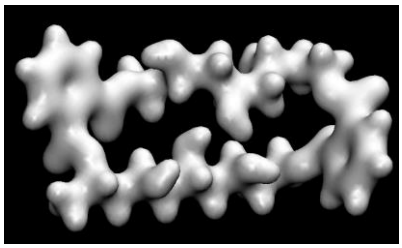
14 PVAnp-Azelaic acid



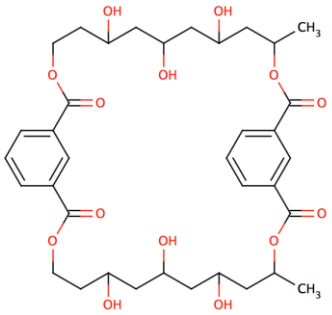


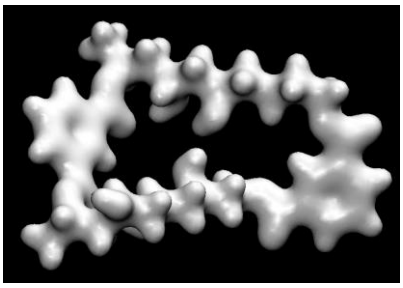
15 PVAnp-Phtalic acid



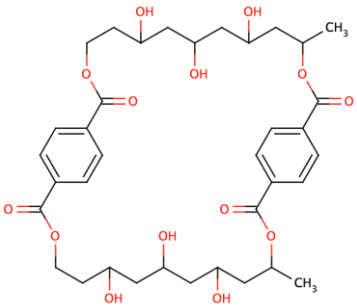


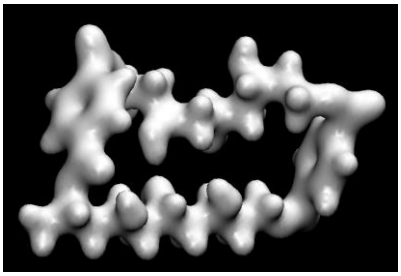
16 PVAnp-Isophtalic acid



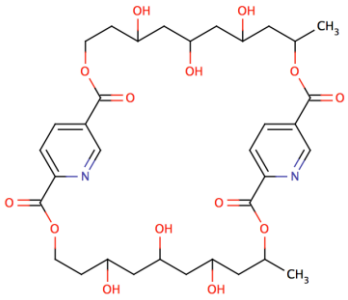


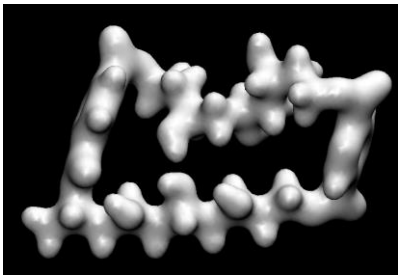
17 PVAnp-Terephtalic acid



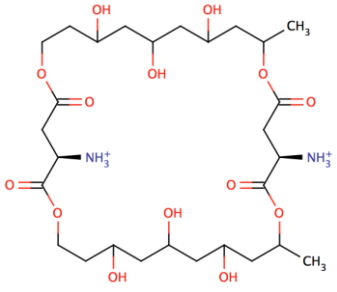


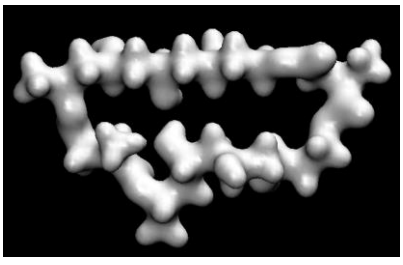
18 PVAnp-2,5-pyridin acid



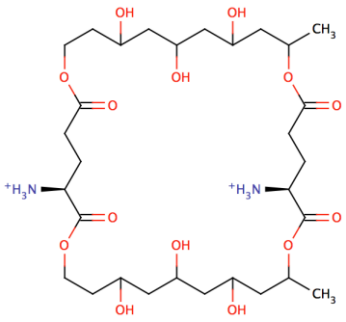


19 PVAnp-Aspartic acid





20 PVAnp-Glutamic acid



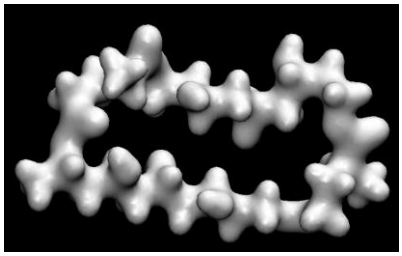


Table S2. Vibration modes and band frequencies of PVA and PDCAH.

Identification	Chemical group		Wave numbers (cm^{-1})
	PVA PSAH PMALiH PAAH PMALEH	O-H from the intermolecular and intramolecular hydrogen bonds	ν ~3400
	PAAH	N-H from alkyl-NH_2 group	ν ~3400 (overlapping whit the OH bands from PVA)
	PMALEH	O-H from maleic acid	ν 3380
	PVA PSAH PMALiH PAAH PMALEH	C-H from alkyl groups	ν 2840-3000
	PSAH	C=O	ν 1704
	PMALiH		ν 1715
	PAAH		ν 1689
	PMALEH		ν 1697
	PAAH	CO-NH	ν 1630 and 1419
	PVA PMALiH	-C=C	ν 1640 ν 1636
	PMALEH	CO-CH=CH	ν 1627
	PMALiH	C-O	δ 1180
	PVA	CO (crystallinity)	ν 1100
	PVA PSAH PMALiH PAAH PMALEH	C-O-C	ν 1150-1085
	PVA PSAH PMALiH PAAH PMALEH	CH_2	δ 1461-1417

Table S3. Mechanical parameters of **PDCAH**.

PDCAH	σm, MPa	εB, %	E, MPa
PMALEH	13.1	183.9	61.1
PAAH	9.5	37.8	176.4
PSAH	19.3	220.7	82.4
PMALIH	17.4	209.9	63.8

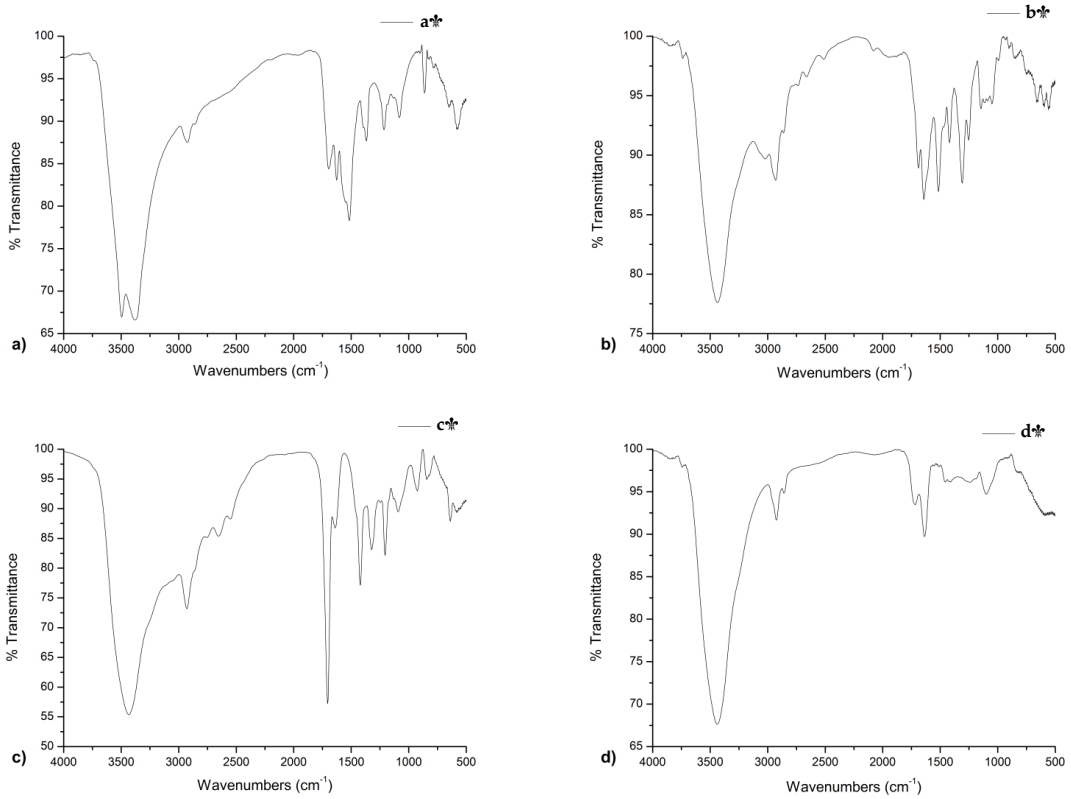


Figure S1. FTIR spectra of (**a**) PMALEH; (**b**) PAAH; (**c**) PSAH and (**d**) PMALIH.