Supporting Information:-

Experimental Section.

Synthesis. N-(4-n-tetradecyloxybenzoyl)-L-carnosine (**1**) was synthesized from NHS ester of 4-n-tetradecyloxybenzoic acid and L-carnosine (Aldrich) following a procedure reported in the literature.[1] The N-(n-alkanoyl)-L-carnosine derivatives (**2**, **3**) were synthesized from the corresponding acid chloride and L-carnosine in THF-water mixture in presence of excess triethylamine (pH 8-9). After solvent evaporation, the product was obtained by acidification (pH 5) with dilute HCl. All the amphiphiles in zwitterionic form were obtained as white solid which were purified by recrystallization from ethanol-water mixture.

Chemical Identification of amphiphiles

Amphiphile **1**:

$[\alpha]_D^{25}$ (0.5 %, CH_3OH) =+19.50, **NMR** :(200 MHz, D_2O,NaOD), δ (δ in ppm,):0.74(t ,3H, CH_2 $(CH_2)_{12}$-CH_3), 1.32(m, 24H, (CH_2)$_{12}$-CH_3) 1.99 (t, 2H - CO-CH_2-$(CH_2)_{12}$-CH_3) 3.41(q, 2H, -CO-CH_2CH_2-NH-) 2.75(t, 2H, -CO-CH_2-CH_2-NH) 4.28 (q, 1H, CH_2-C*H*-NH(COOH)-), 6.6 (s, imidazole N-CH-NH), 7.5 (s, imidazole N-CH-NH), 6.5(d,1H, benzene ring), 7.54(d, 1H, benzene ring) **FT-IR (KBr, cm^{-1}):** 2852-2924, 3295, 1542, 1639, 1711, 1256 **CHN analysis:** C 61. 5% , H 8.1 %, N 10.3%

Amphiphile **2**:

m.p. 427-429 K , $[\alpha]_D^{25}$ (0.5 %, CH_3OH) =+21.7, **NMR** : (200 MHz, D_2O,NaOD), δ (δ in ppm,):0.719(t ,3H, CH_2-$(CH_2)_7$-CH_3), 1.132(m, 14H, (CH_2)$_7$-CH_3) 1.421(m, 2H -CH_2-$(CH_2)_8$-CH_3), 2.043 (t, 2H, -CH_2CH_2-CO-) 2.34(t, 2H, -CO-CH_2-CH_2-NH) 3.234 (t, 2H, CO-CH_2-CH_2-NH -) 4.3 (q, 1H, NH-C*H*-CH_2), 2.886 (m,2H, NH-CH-CH_2),7.47(s, imidazole CH), 6.773 (s, imidazole N-CH-NH), **FT-IR (KBr, cm^{-1}):** 2851-2920, 3303, 1545, 1647, 1712, 1250

Amphiphile **3**:

m.p. 431-435 K , $[\alpha]_D^{25}$ (0.5 %, CH_3OH) =+20.3, (**NMR** :200 MHz, D_2O,NaOD), δ (δ in ppm,):0.720(t ,3H, CH_2-$(CH_2)_9$-CH_3), 1.139(m, 18H, $(CH_2)_9$-CH_3) 1.43(m, 2H -CH_2-$(CH_2)_9$-CH_3), 2.89 (t, 2H, -CH_2CH_2-CO-) 2.34(t, 2H, -CO-CH_2-CH_2.NH) 3.237 (t, 2H, CO-CH_2-CH_2.NH -) 4.315 (q, 1H, NH-CH-CH_2), 2.82(m,2H, NH-CH-CH_2),7.54(s, imidazole CH), 6.804 (s, imidazole N-CH-NH) **FT-IR (KBr, cm^{-1}):** 2855-2926, 3304, 1542, 1642, 1710, 1251

Methods and Instrumentation. Melting point of solid compounds was measured using Instind (Kolkata) melting point apparatus with open capillaries. The measurements of optical rotations were performed with a JASCO (Model P-1020) digital polarimeter. The Fourier Transform IR (FTIR) spectra were measured with a Perkin-Elmer (Model Spectrum Rx I) spectrometer. The ^{1}H NMR spectra were recorded on an AVANCE DAX-400 (Bruker, Sweden) 400 MHz NMR spectrometer in D_2O/NaOD solvent with CH_3CN as a standard. All measurements were done at room temperature (~298 K) unless otherwise mentioned.

A weighed amount of solid gelator taken in a screw caped vial was dissolved in buffer by heating in a water bath (~70 ^oC) and subsequently allowed to stand at room temperature to obtain a stable gel as confirmed by the resistance to flow under gravity upon inversion of the tube. The gel melting temperature was determined by placing the screw cap glass vials containing gels in a temperature-controlled water bath (Julabo Model) and visually observing the flow upon tilt for every degree rise in temperature.

For electron micrographs, the hot sample solution was placed on the aluminum or copper foil, allowed to cool at room temperature and then dried in desiccators for 24 h. A layer of gold was sputtered on top to make conducting surface and finally the specimen was transferred into the Field Emission Scanning Electron Microscope (FESEM, Zeiss, Supra-40) operating at 5-10 kV to get the micrograph.

The XRD spectra were taken at room temperature for all air-dried hydrogel samples prepared on a glass slide. The experiment was performed on a Pan Analytica X'Pert Pro X-ray diffractometer using Cu target (Cu Kα) and Ni filter at a scanning rate of 0.001 s^{-1} between 2 to 20^0, operating at a voltage of 40 kV, current 30 mA.

Notes and references

1 A. Mohanty, J. Dey, *Chem. Commun.*, 2003, *12*, 1384 ; A.Mohanty, J. Dey, *J. Chromatogr A* , 2005, **1070**, 185 ; A. Mohanty, J. Dey, *J. Chromatogr A* , 2006, **1128**, 259 ; A. Mohanty, J. Dey, *Langmuir ,* 2004, **20**, 8452