

3,3'-diselenodipropionic acid immobilized gelatin gel, a biomimic catalytic nitric oxide generating material for topical wound healing application

Ram P. Das^{1,3}, Beena G. Singh^{1,3}, J. Aishwarya^{1,3,4}, Liladhar B. Kumbhare², Amit
Kunwar^{1,3,*}

¹Radiation & Photochemistry Division, ²Chemistry Division, Bhabha Atomic Research
Centre, Trombay, Mumbai-400085, India

³Homi Bhabha National Institute, Anushaktinagar, Mumbai –400094, India

⁴Advanced Centre for Treatment, Research and Education in Cancer, Mumbai – 410210,
India

*Corresponding authors

Radiation and Photochemistry Division,

Bhabha Atomic Research Centre,

Mumbai - 400085, India.

E-mail- kamit@barc.gov.in

Tel: 91-22-25592352, Fax: 91-22-25505151.

Supplementary Figures

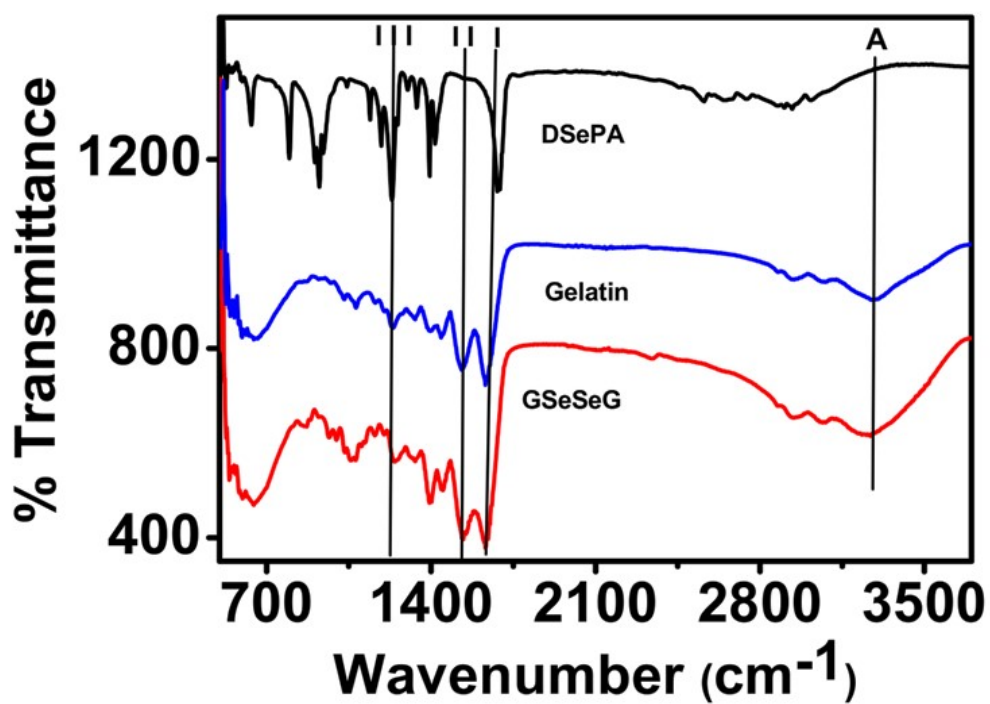
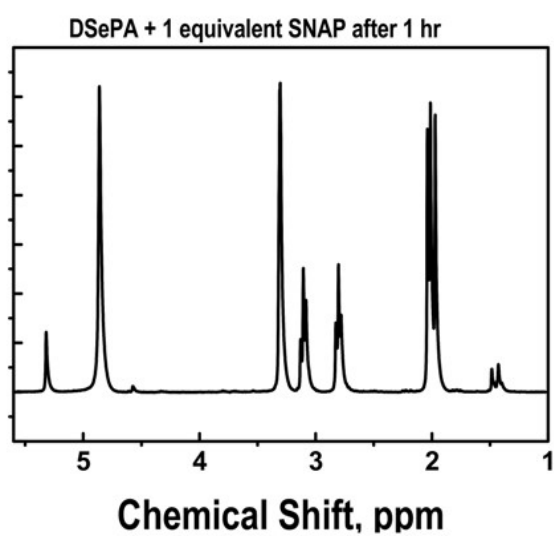


Figure S1: Plot represents the IR spectra of neat gelatin, DSePA and DSePA conjugated gelatin (G-Se-Se-G).

(A)



(B)

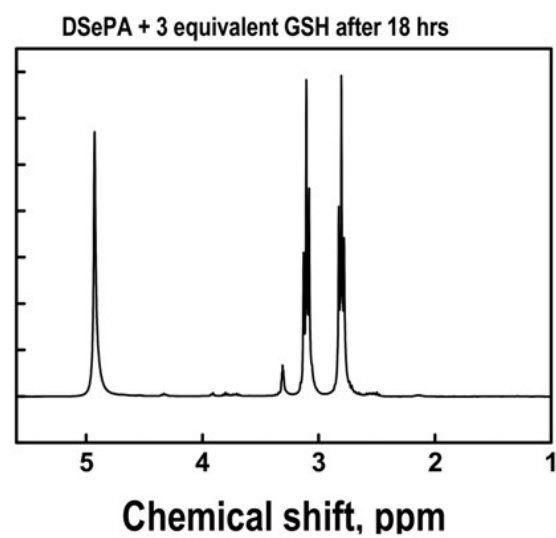


Figure S2: Plot A represent ^1H NMR of, DSePA + SNAP (1:1) at 1 h and DSePA + GSH (1:3) at 18 h in methanol- d_4

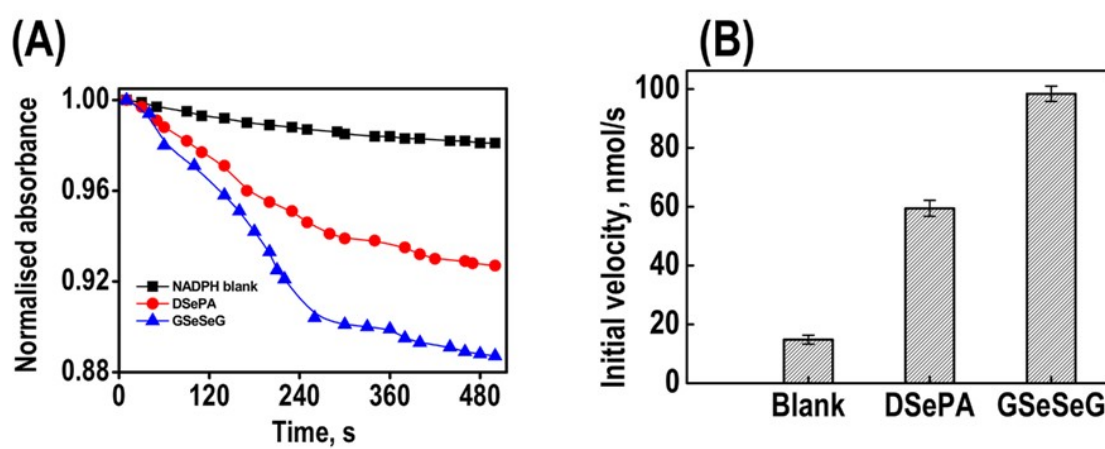


Figure S3: Plot A corresponds to the decay of NADPH with time. Plot B shows the initial velocity obtained after linear fitting of the initial decay data of NADPH with time.

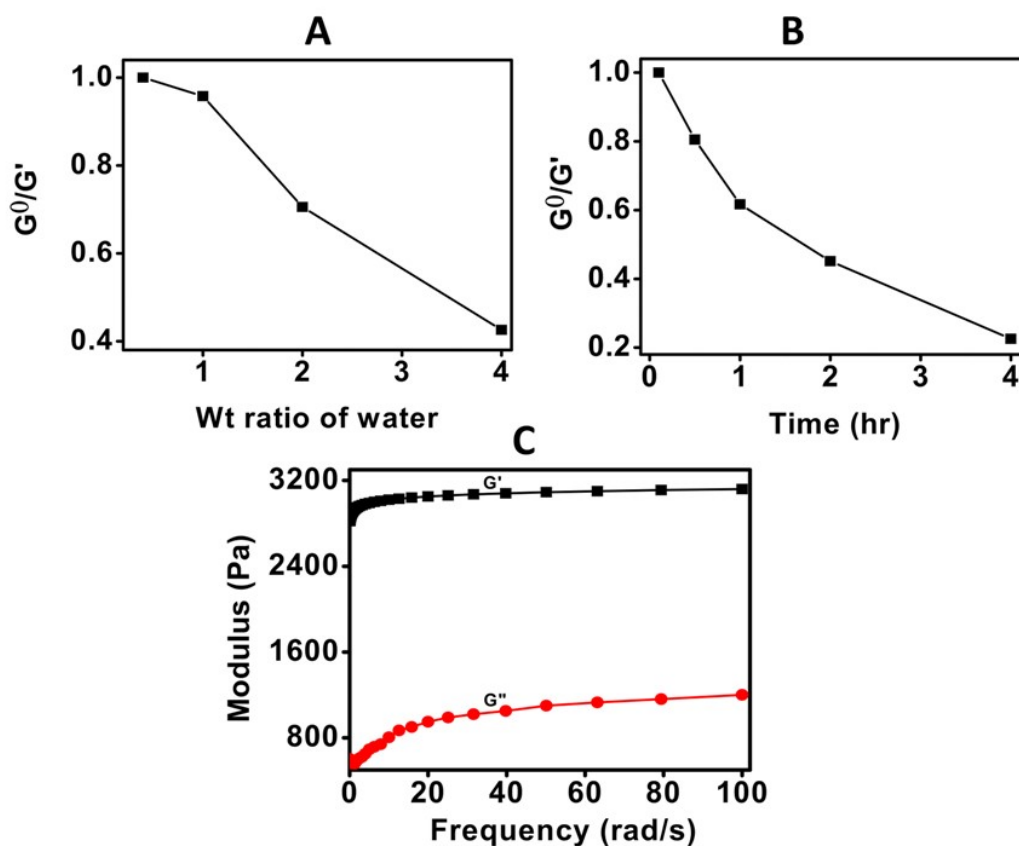


Figure S4: Plot A shows reduction in storage (G') moduli of G-Se-Se-G gel in the presence of different weight ratio of water. Plot B shows reduction in storage (G') moduli of G-Se-Se-G gel in presence of a fixed 4 weight ratio of water as a function of incubation time. Plot C shows the change of storage (G') and loss (G'') moduli of G-Se-Se-G gel as a function of frequency change (1 - 100 rad/s) after six months of storage under sealed pack condition at ambient temperature.

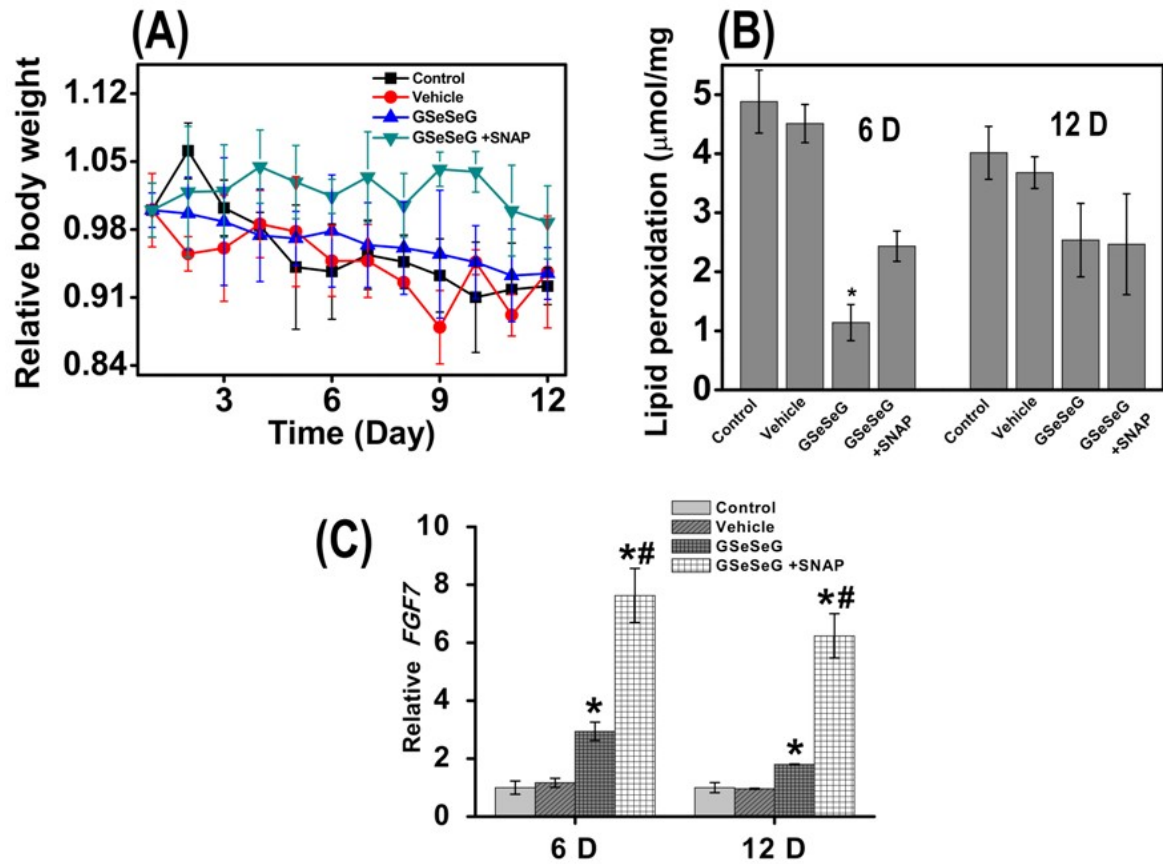


Figure S5: Plot A shows the relative change in body weight as a function of post-wounding time (in days) for different treatment groups. Plot B shows content of lipid peroxidation in wound lysate of different treatment groups on day 6th and 12th of post wounding. Plot C shows relative mRNA expression of FGF7 in the wound tissue of different treatment groups on day 6th and 12th of post wounding by RT-PCR. The expression of β -actin was used as an internal control. Results are represented as mean \pm SEM (n = 4) of an independent experiment. * <0.05 as compared to control and vehicle groups; # <0.05 as compared to G-Se-Se-G group.