

Poly(vinyl alcohol)- Gantrez[®] AN cryogels for wound care applications

Enrica Caló,^a Joao M.S. de Barros,^a Lucy Ballamy,^b Vitaliy V. Khutoryanskiy^a

^aReading School of Pharmacy, University of Reading, Reading, Berkshire, RG6 6AD, United Kingdom

^bConvaTec UK Ltd, First Avenue-Deeside Industrial Park, Flintshire CH5 2NU, Wales, United Kingdom.

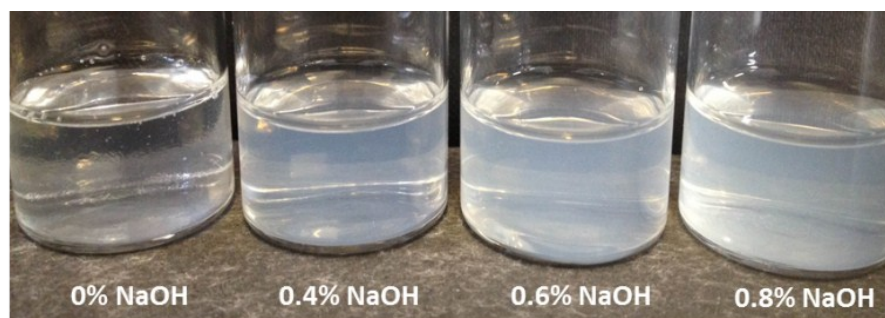
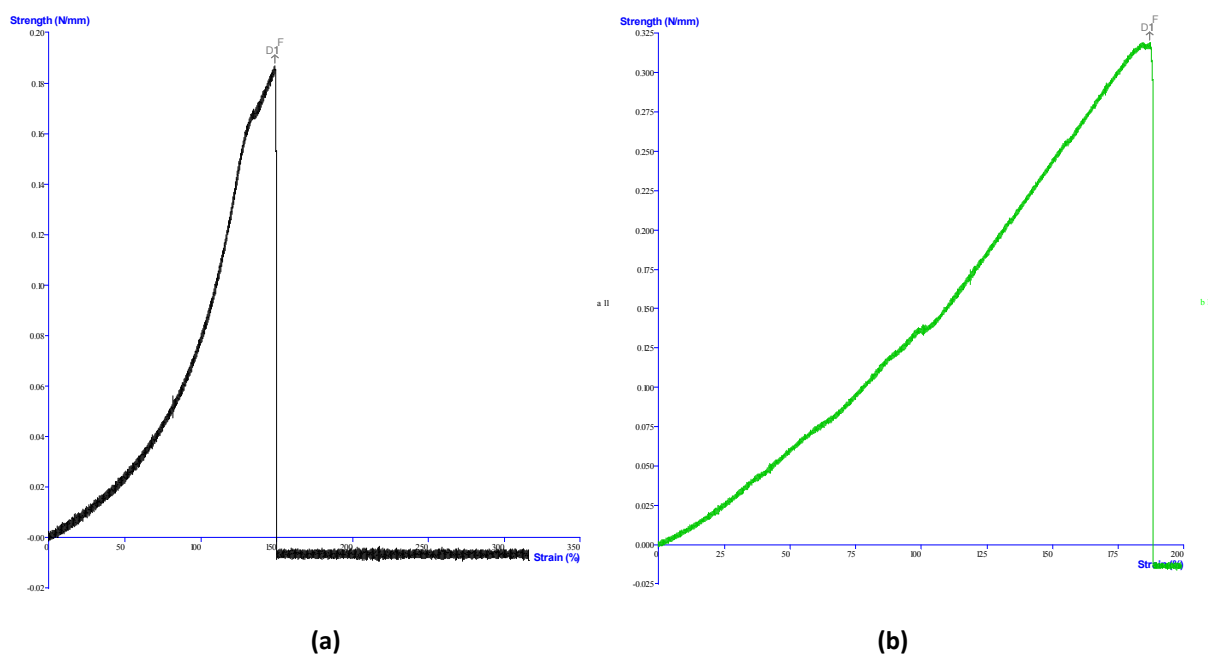
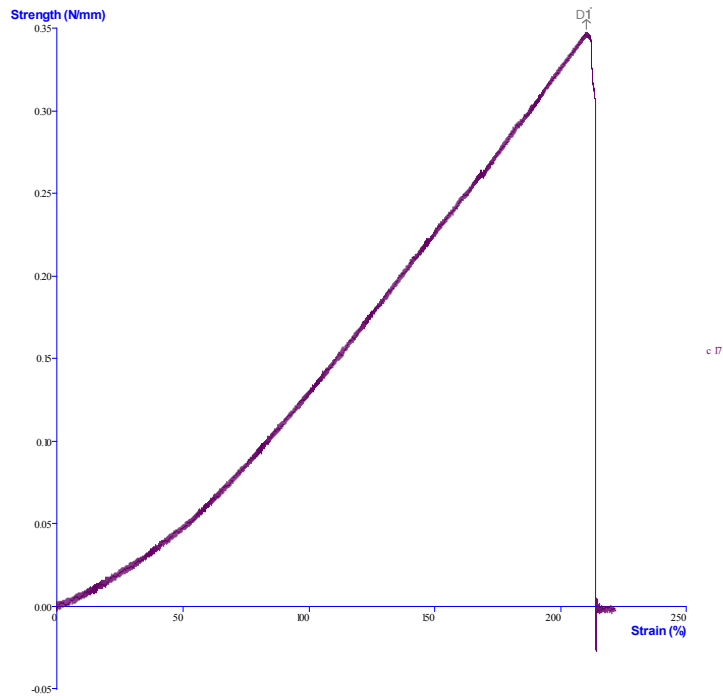


Figure S1. PVA-Gantrez[®] liquid mixture with no NaOH added and PVA-Gantrez[®]AN plus NaOH (0.4, 0.6 and 0.8%w/v) mixtures before freezing.





(c)

Figure S2. Exemplary tensile test raw data for PVA-Gantrez® cryogels prepared with addition of 0.4 % (a), 0.6 % (b), 0.8 % NaOH (c).

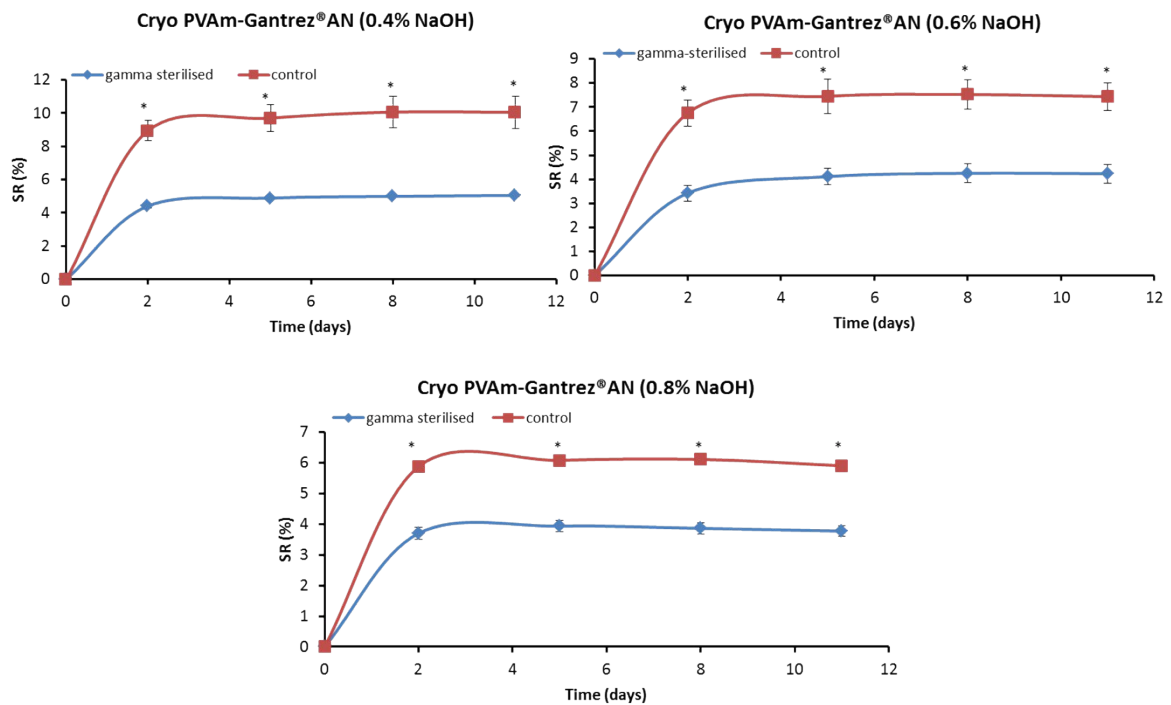


Figure S3. Swelling kinetics in deionised water for gamma-sterilised PVA-Gantrez®AN cryogels during a period of 11 days. Non-irradiated samples are used as control. Asterisk (*) indicates significant statistical difference ($p < 0.05$). Please note the test was performed on non-freshly prepared samples due to the irradiation process being conducted by Synergy Health plc. not in the house.

Table S1. Mechanical properties of gamma-irradiated and non-gamma irradiated PVA-Gantrez®AN cryogels. Please note the test was performed on non-freshly prepared samples due to the irradiation process being conducted by Synergy Health plc. not in the house.

γ-irradiated cryogels	Tensile stress at break (N/mm²)	Maximum strength (N/mm)	Elongation to Break (%)	Young's Modulus (N/mm²)
0.4% NaOH	$(6.0 \pm 4.4) \times 10^{-5}$	0.19 ± 0.1	36 ± 4	$(1.0 \pm 0.2) \times 10^{-2}$
0.6% NaOH	$(8.4 \pm 6.5) \times 10^{-4}$	$(8.0 \pm 0.3) \times 10^{-2}$	43.2 ± 2.2	$(7.3 \pm 2.3) \times 10^{-3}$
0.8% NaOH	$(2.5 \pm 0.8) \times 10^{-5}$	$(5.7 \pm 4.3) \times 10^{-2}$	46.1 ± 1.7	$(7.6 \pm 3.2) \times 10^{-3}$

Non- irradiated cryogels	Tensile stress at break (N/mm²)	Maximum strength (N/mm)	Elongation to Break (%)	Young's Modulus (N/mm²)
0.4% NaOH	$(2.1 \pm 1.6) \times 10^{-5}$	0.2 ± 0	78.2 ± 7.5	$(4.3 \pm 1.2) \times 10^{-3}$
0.6% NaOH	$(5.5 \pm 1.7) \times 10^{-5}$	$0.1 \pm 4 \times 10^{-2}$	78.0 ± 3.6	$(5.6 \pm 1.2) \times 10^{-3}$
0.8% NaOH	$(3.9 \pm 1.7) \times 10^{-5}$	$(9.6 \pm 4.7) \times 10^{-2}$	72.3 ± 10.1	$(9.6 \pm 3.7) \times 10^{-3}$