P2X7 Receptor Antagonist delivery vehicle based on photocrosslinked amphiphilic hybrid gels

Derya Aydin and Seda Kizilel*

Department of Chemical and Biological Engineering, Koc University, Sariyer, Istanbul, Turkey, 34450

*E-mail: skizilel@ku.edu.tr
Fax:+90-212-338-1548

SUPPLEMENTARY INFORMATION

Figure S1. FTIR spectra of SBS membrane, SBS membrane-PEG, SBS gel and SBS-PEG gel

Figure S1 demonstrates the peaks related to the asymmetrical (at 2920 cm\(^{-1}\)) and stretching (at 3006 cm\(^{-1}\)) vibrations of \(\text{=CH}_2\) groups in pendant vinyl double bonds of butadiene. Decreases in the peaks at 2920 cm\(^{-1}\) were observed in SBS gel and SBS-PEG gel groups compared to
that of SBS membrane and SBS membrane-PEG groups. This result could be attributed to the saturation of vinyl groups in the SBS structure in crosslinked SBS and SBS-PEG gels samples.

The peak at 1639 cm$^{-1}$ can be assigned to stretching vibrations of (C=) in vinyl-vinyl-polybutadiene groups. Decreases in this peak in SBS gel and SBS-PEG gels could be attributed to the consumption of these double bonds in SBS upon crosslinking. The peaks at the 1580 cm$^{-1}$ and 1602 cm$^{-1}$ were assigned to stretching vibrations of the carbons in the aromatic rings where these peaks disappeared in crosslinked SBS and SBS-PEG gel networks as a result of the formation of a stable network. This analysis confirms the successful crosslinking of SBS polymer both in SBS and SBS-PEG gels.

Figure S2. Possible diffusion process/mechanism for the release of the P2X7 from SBS-PEG gels towards PBS.

Figure S3. Adhesion and biocompatibility experiment of SBS gel and SBS-PEG gel on human skin.