Supporting Information

Antibacterial activity of natural rubber based coatings containing a new guanidinium-monomer as active agent

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A. Films formulation

Figure SII. Images observed using an optical microscope by focusing on two samples containing 10% of guanidinium monomer with or without PETA after photopolymerization. (a, b, c): films obtained with acrylate oligomers, guanidinium monomer (10 %) without PETA and (d, e, f) corresponding films with PETA (20 %).
Figure SI2. The IR absorbance change of the acrylate group band at 1405 cm\(^{-1}\) upon irradiation at 45s (Black line) and after 45s (Red line). It is clearly shown that the degradation of the carbon-carbon double bond of the repeating unit started.

B. Films characterization

Figure SI3. A drop of water on four films in contact angle measurement: (a) Film remained completely dry obtained with F1 formulation; (b) Film immerged for 351 days in water with F1 formulation; (c) Film remained completely dry obtained with F2 formulation; (d) Film immerged for 351 days in water with F2 formulation
C. Leaching tests

Figure SI4. Quantification of standard solutions of Darocur 1173 in water obtained by UV-visible absorbance at 247nm.

Figure SI5. The standard curve of Darocur 1173 was generated by plotting the peak areas obtained by HPLC method at 247nm, for different concentrations of analyte.
Figure SI6. Quantification of standard solutions of Benzoic acid, generated by plotting the peak areas obtained by HPLC method at 230nm.

Figure SI7. Quantification of standard solutions of Benzaldehyde, generated by plotting the peak areas, obtained by HPLC method at 247nm.
Figure SI8. Quantification of standard solutions of Guanidine monomer, generated by plotting the peak areas, obtained by HPLC method at 205nm.

Figure SI9. Peaks present on a HPLC chromatogram at 205nm obtained the leaching test of film with F2 formulation after 14 days in water, no peak at 3.7min and 24.9min corresponding to resp. Guanidine monomer and PETA released were detected.
D. Biological assays

Figure SI10. Antibiograms: left) Pseudomonas aeruginosa; middle) Staphylococcus epidermidis; right) Staphylococcus aureus. (1) guanidine monomer batch 1; (2) guanidine monomer batch 2; (3) Darocur 1173; (4) pentaerythritol triacrylate; (5) Acrylate oligomers; (6) Trifluoroacetic acid.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration (mg/ml)</th>
<th>Inhibition halo (cm)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine monomer batch 1</td>
<td>0.8</td>
<td>SA: 0.9</td>
<td>PA: 1,2</td>
</tr>
<tr>
<td>Guanidine monomer batch 2</td>
<td>0.8</td>
<td>SA: 1.3</td>
<td>PA: 0</td>
</tr>
<tr>
<td>Darocur 1173</td>
<td>pure</td>
<td>SA: 1.2</td>
<td>PA: 0.6</td>
</tr>
<tr>
<td>pentaerythritol triacrylate</td>
<td>pure</td>
<td>SA: 1.3</td>
<td>PA: 0</td>
</tr>
<tr>
<td>Acrylate oligomers</td>
<td>pure</td>
<td>SA: 0</td>
<td>PA: 0</td>
</tr>
<tr>
<td>Trifluoroacetic acid</td>
<td>pure</td>
<td>SA: 3.6</td>
<td>PA: 4.8</td>
</tr>
</tbody>
</table>

Table SI1. Inhibition halo for the three bacteria Pseudomonas aeruginosa (PA, gram negative), Staphylococcus aureus (SA, gram positive), Staphylococcus epidermidis (SE, gram positive). Guanidine monomer was dissolved in water.