ADVANCED MATERIALS INTERFACES

Supporting Information

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Selective Inhibition of *Streptococci* Biofilm Growth via a Hydroxylated Azobenzene Coating

*Dylan I. Mori, Michael J. Schurr, and Devatha P. Nair**

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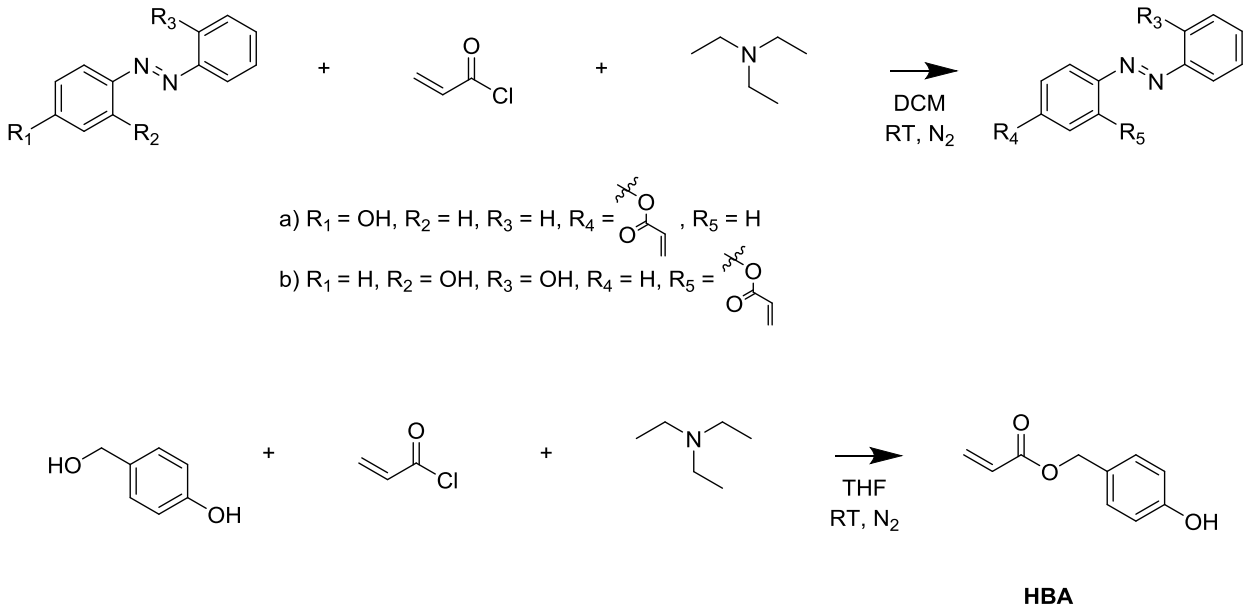

Figure S1. Synthetic scheme of an acrylated azobenzene (AAZO, 1a), phenolic acrylated azobenzene (OH-AAZO, 1b), and 4-hydroxybenzyl acrylate (HBA) as a control monomer.

UV-Vis spectra

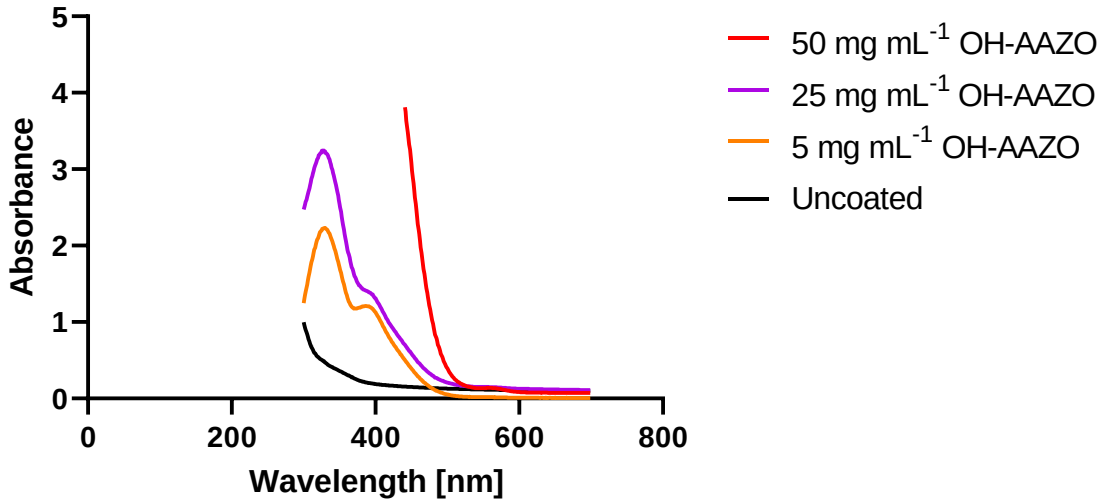

Figure S2. Example UV-Vis spectra of OH-AAZO coatings at different concentrations (plus an uncoated control substrate) immediately following thermal curing and aqueous extraction.

Cytotoxicity results

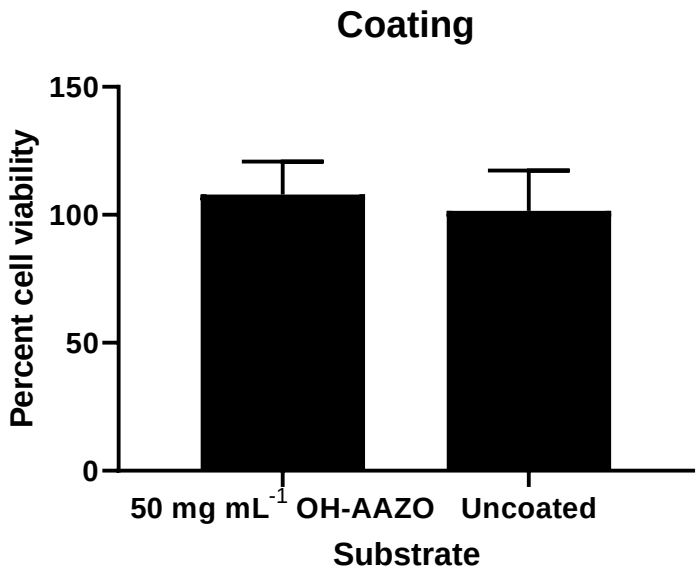

Figure S3. Cell cytotoxicity results for L929 mouse epithelial cells on coated 50 mg mL^{-1} OH-AAZO substrates. All values were normalized to a positive control (cells grown in the absence of a substrate).

Crystal violet assay

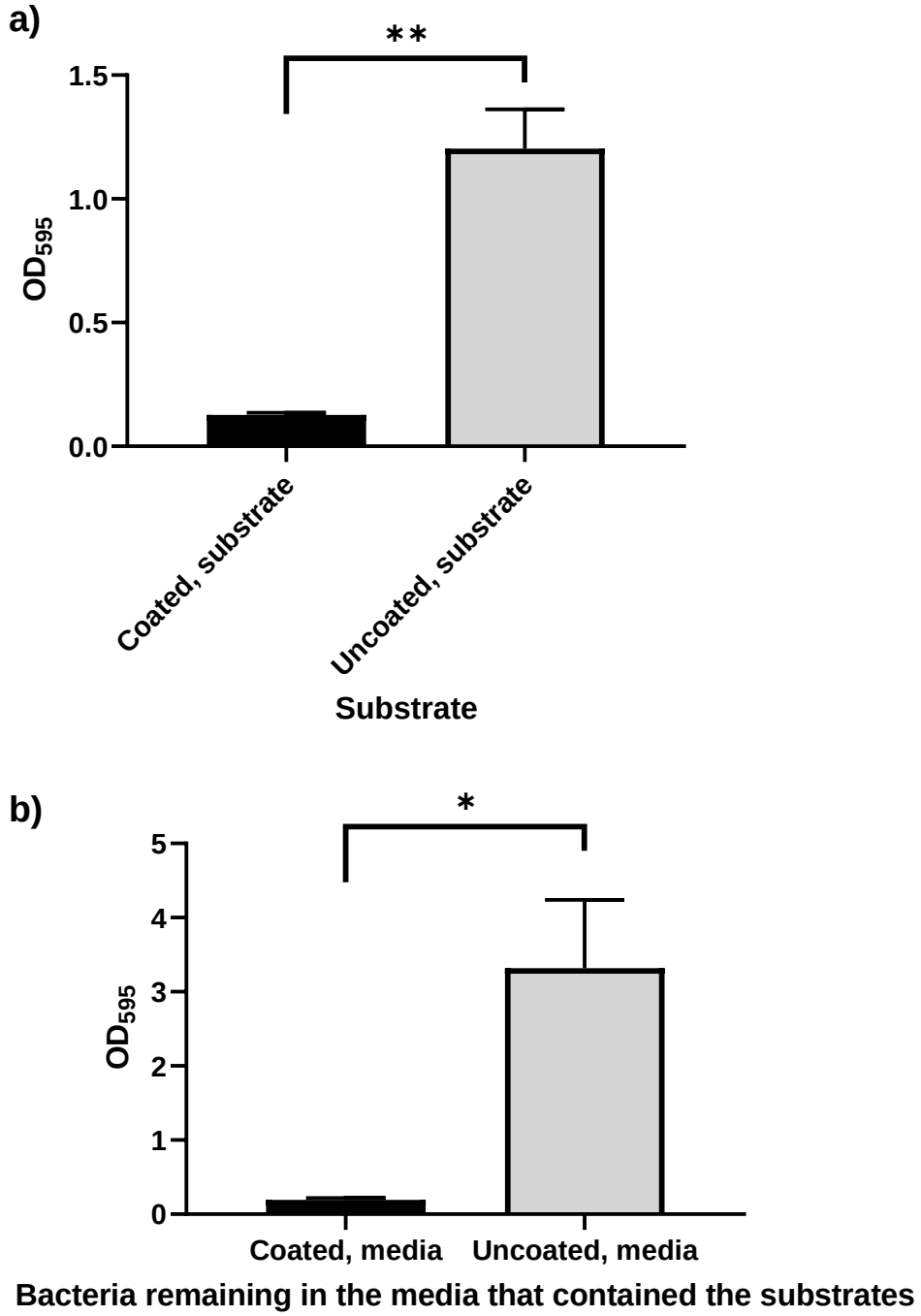

Figure S4. Crystal violet assay of *S. mutans* biofilms grown on OH-AAZO-coated and uncoated substrates. After 24 h of biofilm growth, the substrates were removed from the wells, stained with crystal violet solution, and the optical density values were quantified via a plate reader at λ=595 nm (S4a). The biofilm remaining in the wells that previously contained the substrates was also stained and quantified using a similar method (S4b). These results reflect the trend observed with the sonication and showed significantly more *S. mutans*

biofilm growth for the uncoated substrates (sonication and media values) relative to the OH-AAZO-coated substrates (n=3 for all, * $p \leq 0.05$, ** $p \leq 0.01$, t-test)

Plating of media to confirm bacteria death

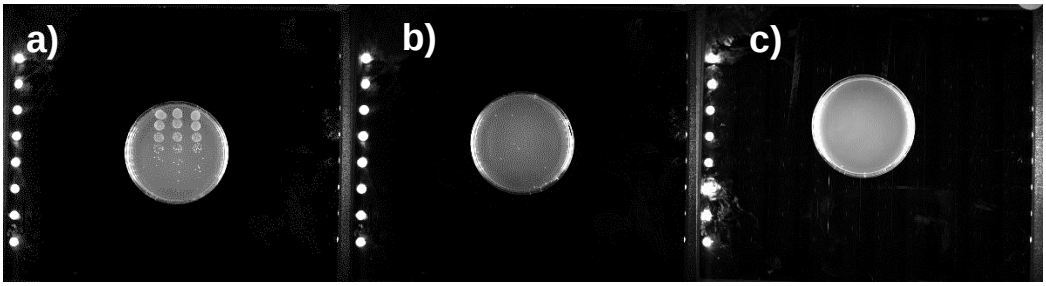

Figure S5. Complete plating of media of *S. mutans* in contact with OH-AAZO-coated substrates at different timepoints following seeding. The media sampled in S5a at t = 0 h was serial diluted as described previously and gave a total CFU count of $(8.0 \pm 3.2) \times 10^6$ CFUs. The media sampled in S5b at t = 4 h was streaked across the entire plate and gave a total CFU count of 8 CFUs. The media sampled in S5c at t = 24 h was streaked across the entire plate and gave a total CFU count of 0 CFUs.

Curing Study

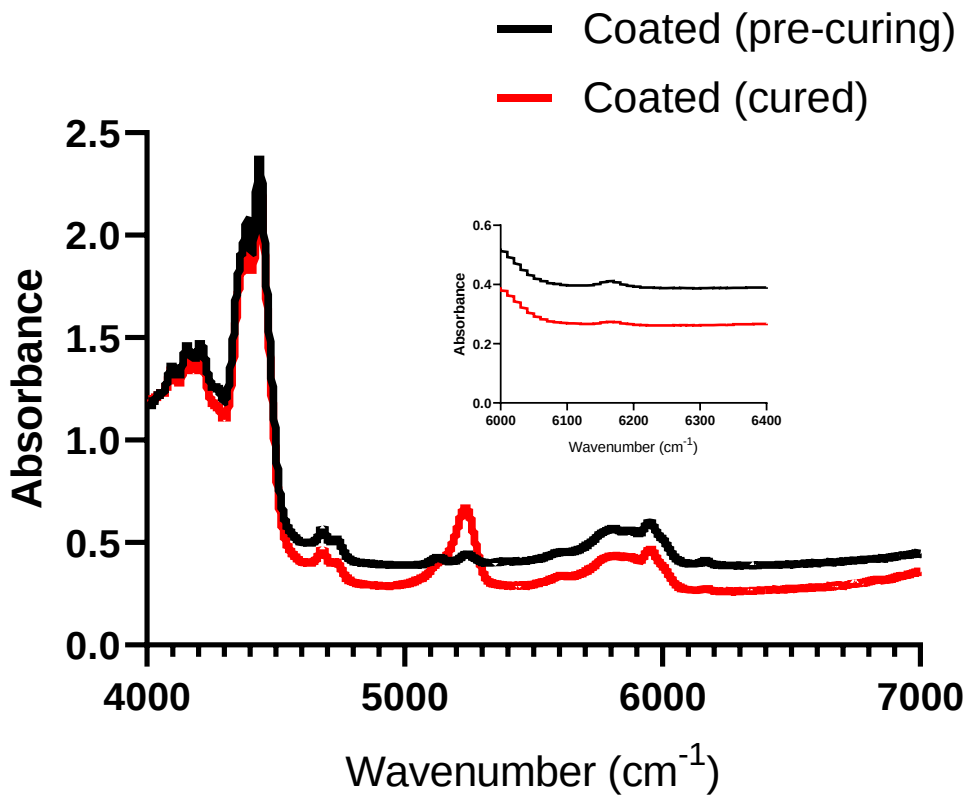

Figure S6. Near FT-IR spectra to monitor the disappearance of the acrylate peak (6260 – 6096 cm^{-1}), prior to curing (black) and after curing/extraction (red).

Growth curves

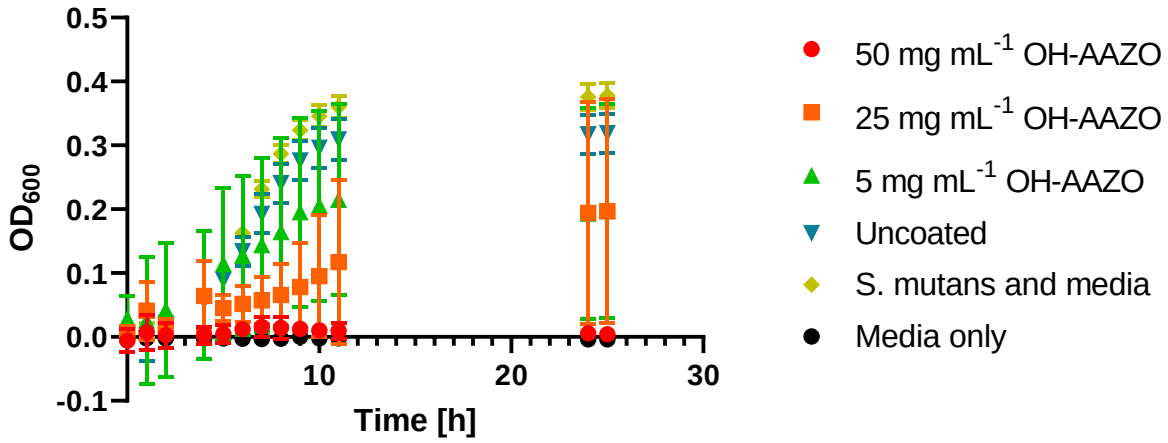

Figure S7. Growth curve data of *S. mutans* in a 96-well plate in the presence of coated OH-AAZO substrates at different concentrations.

Table S1. Diameter of kill zone of sampled media over time

Time [h][a)]	d (1) [mm]	d (2) [mm]	d (3) [mm]	d (LF) [mm]	d (U) [mm]	d (W) [mm]
2	0	0	0	41	0	0
4	0	0	0	45	0	0
6	0	0	0	45	0	0
8	0	0	0	44	0	0
12	0	0	0	49	0	0

d = diameter of zone of inhibition for three (3) different samplings of media wells containing OH-AAZO substrates and one uncoated (U) well, LF = LevoFloxacin (positive control, 2.5 mg mL^{-1} solution), sterile MilliQ water (W) (negative control). No leaching of OH-AAZO monomer was detected.