

Supplementary Materials

High Bactericidal Self-Assembled Nano-Monolayer of Silver Sulfadiazine on Hydroxylated Material Surfaces

Angelo Taglietti ^{1,*}, Giacomo Dacarro ^{1,*}, Daniele Barbieri ¹, Lucia Cucca ¹, Pietro Grisoli ², Maddalena Patrini ³, Carla Renata Arciola ^{4,5,*} and Piersandro Pallavicini ¹

¹ Dipartimento di Chimica, Sezione di Chimica Generale, Università di Pavia, viale Taramelli 12, 27100 Pavia, Italy

² Dipartimento di Scienze del Farmaco, Università di Pavia, viale Taramelli 10, 27100 Pavia, Italy

³ Dipartimento di Fisica, "A. Volta", Università di Pavia, via Bassi 6, 27100 Pavia, Italy

⁴ Laboratorio di Patologia delle Infezioni Associate all'Impianto, IRCCS Istituto Ortopedico Rizzoli, via di Barbiano 1/10, 40136 Bologna, Italy

⁵ Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, via San Giacomo 14, 40126 Bologna, Italy

* Correspondence: angelo.taglietti@unipv.it (A.T.); giacomo.dacarro@unipv.it (G.D.); carlarenata.arciola@ior.it (C.R.A.)

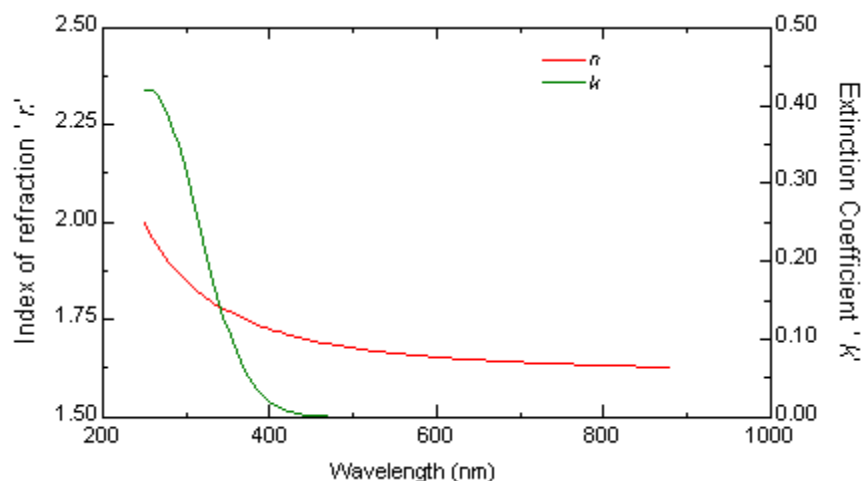


Figure S1. Spectroscopic Ellipsometry.

Optical functions for the SDM and AgSDM monolayers have been modeled with a Sellmeier-type behavior for the refractive index n (considering the value of 1.679 reported in the literature for plain sulfadiazine) joined to gaussian-like extinction coefficient k associated to the UV absorption band, centered at 255 nm.

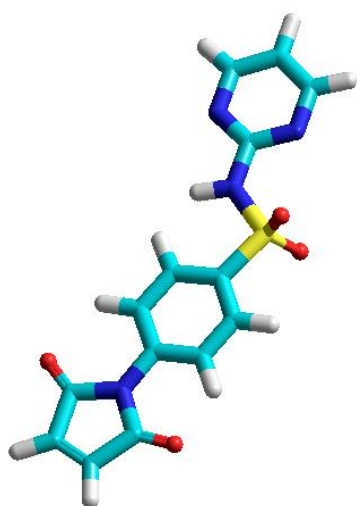


Figure S2. Sulfadiazine maleimide (SDM) PM3 model.

SDM molecular model obtained with a semi-empirical PM3 method. In its extended conformation SDM has a length of 1.3 nm (distance between a C atom of the maleimidic double bond and the terminal C atom of the pyrim).

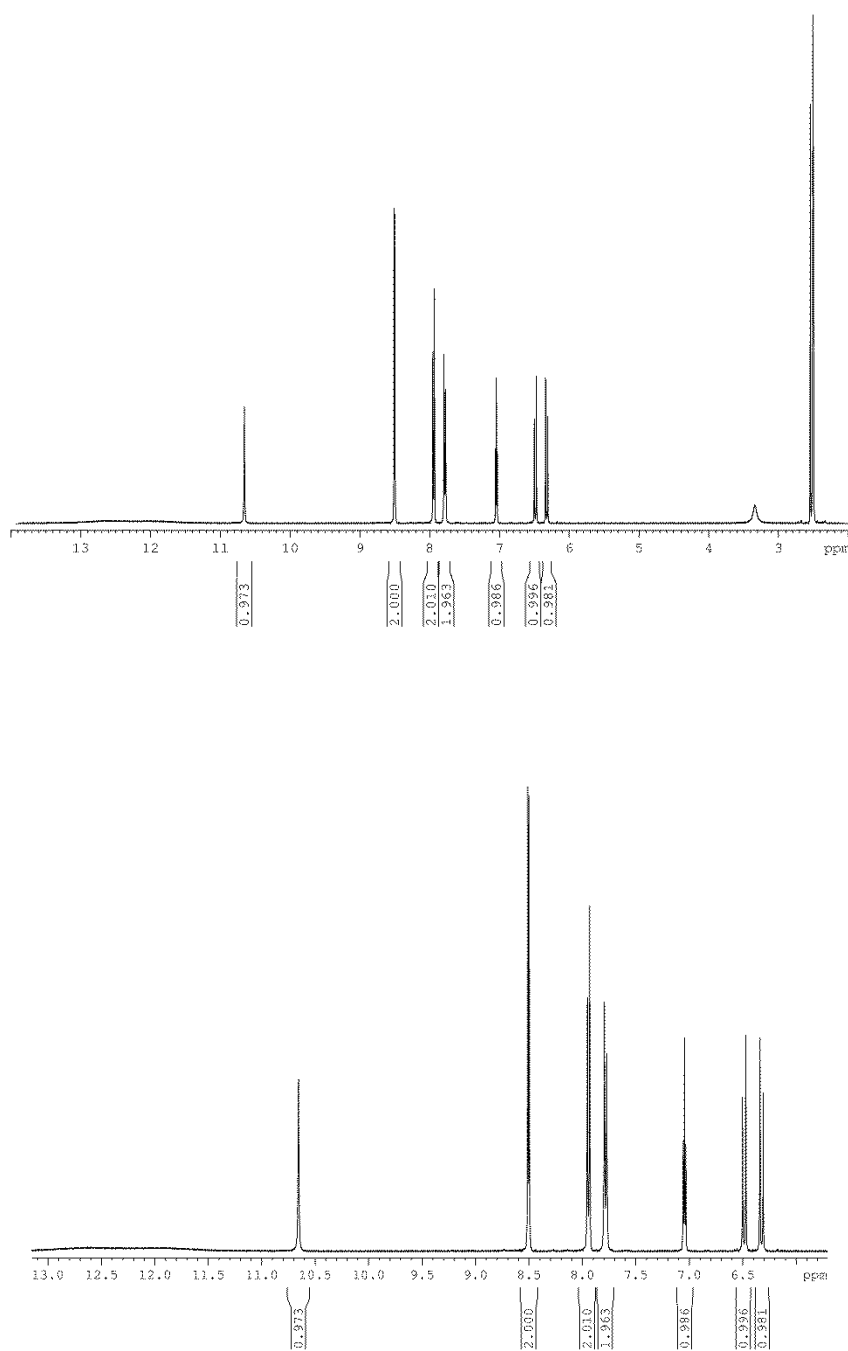


Figure S3. NMR spectra of SDMA (with enlarged zone of characteristic protons).

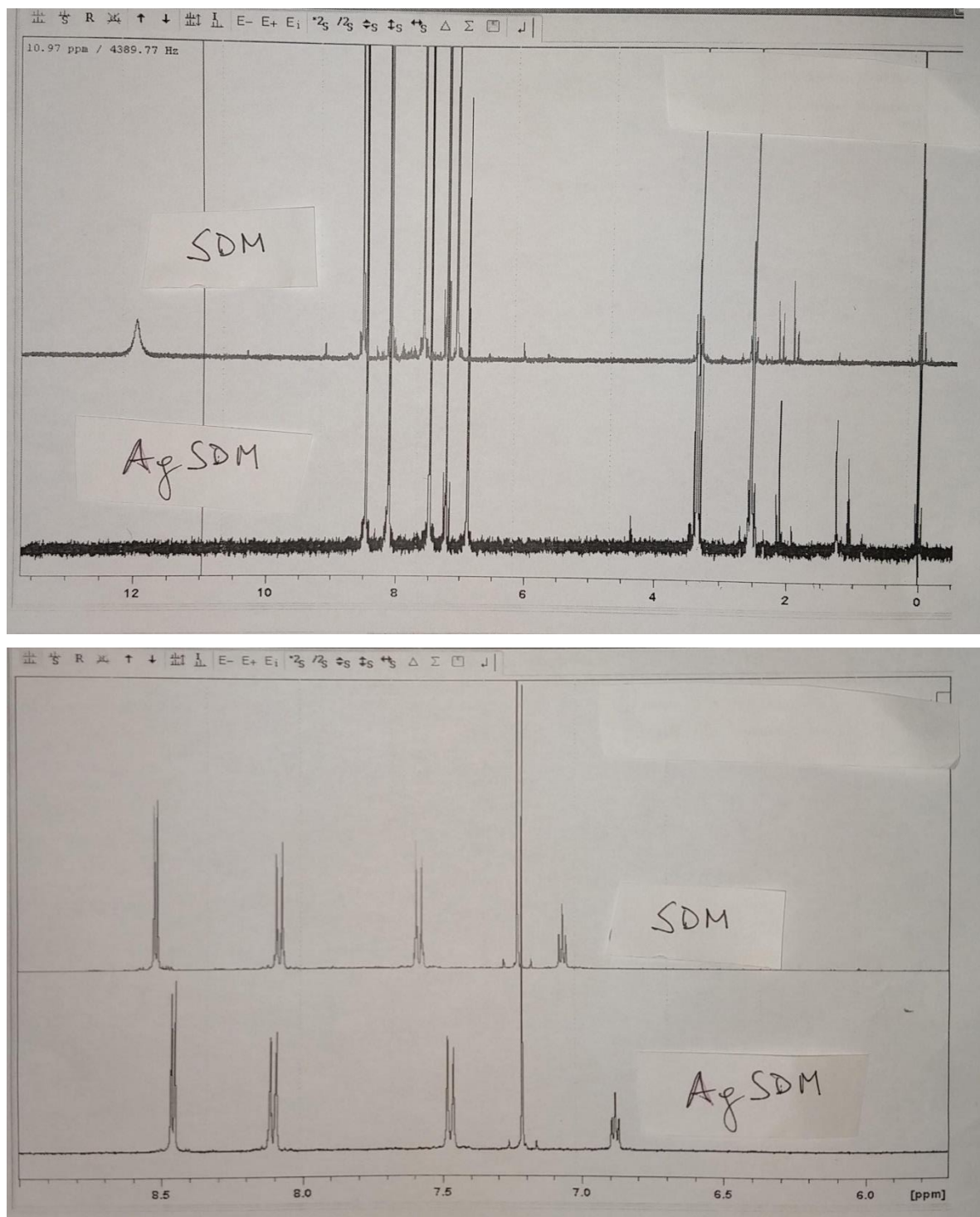


Figure S4. NMR Spectra for SDM and AgSDM (with enlarged zone of characteristic protons).