

Supplementary materials

Synthesis, Molecular and Supramolecular Structure Aspects, and Antimicrobial Activity of the Centrosymmetric [Ag(5-Nitroquinoline)₂]ClO₄ Complex

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Physicochemical characterizations

All chemical were purchased from Sigma-Aldrich Company. CHN analyses were performed using a Perkin Elmer 2400 Elemental Analyzer. The Ag content was determined using Shimadzu atomic absorption spectrophotometer (AA-7000 series, Shimadzu, Ltd, Japan). FT-IR spectra of the samples were measured using a Perkin Elmer 1000 FT-IR spectrophotometer, Waltham, MA, USA (**Fig. S1**).

X-ray measurements

The crystallographic data were collected with a Bruker D8 Quest diffractometer. All calculations were performed using the Bruker APEX III program system and the SHELXTL program package, and a multi-scan absorption correction was made using SADABS.

Hirshfeld analysis

The topology analyses were performed using Crystal Explorer 17.5 program.

Method S1: Antimicrobial studies

a) Tested pathogenic microbes

The antibacterial activity of [Ag(5-NO₂Quin)₂]ClO₄ complex and the free 5-NO₂Quin ligand was evaluated against two Gram positive bacteria ((*S. aureus* (ATCC 25923) and *B. subtilis* (RCMB015(1)NRR LB-543)), two Gram negatvie bacteria ((*E. coli* (ATCC 25922) and *P. vulgaris* (RCMB 004(1)ATCC 13315)) and two fungi ((*A. fumigatus* (RCMB 002008) and *C. albicans* (RCMB 005003(1) ATCC 10231)). Gentamycin was used as standard antibacterial agent. The samples maintained in Brain heart infusion (BHI) at 20°C; 300 mL of each stock–culture was added to 3 mL of BHI broth. Overnight cultures were kept for 24 h at 37 °C ± 1°C and the purity of cultures was checked after 24 h of incubation. After 24 h of incubation, bacterial suspension was diluted with sterile physiological solution,

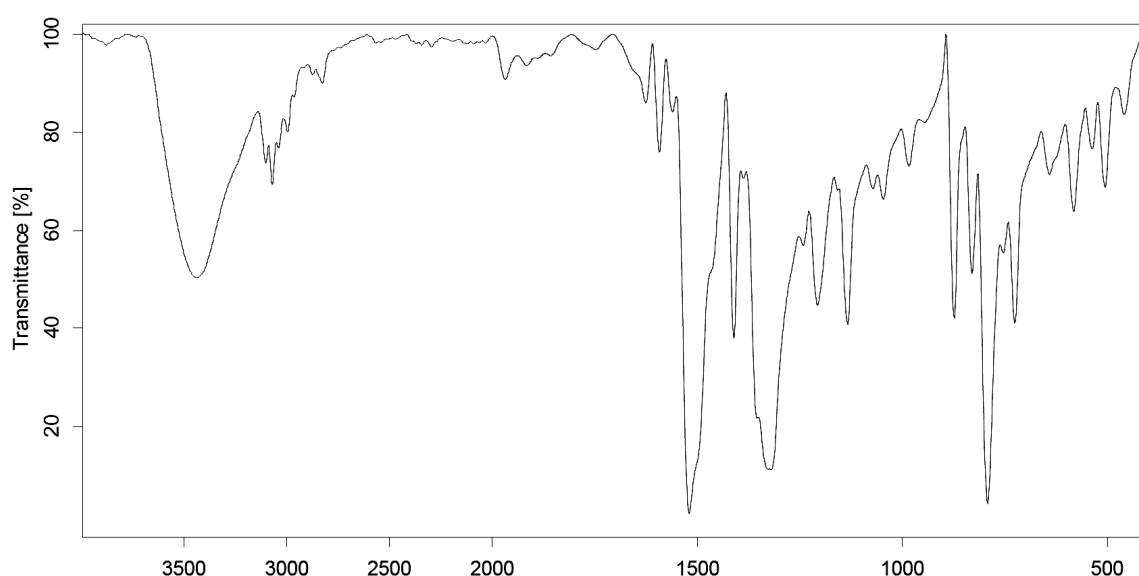
for the diffusion and indirect bioautographic tests, to 108 CFU/mL (turbidity = McFarland barium sulfate standard 0.5). In case of fungi *A. fumigatus* (RCMB 002008) and *C. albicans* (RCMB 005003(1) ATCC 10231), the used medium in antagonistic activity against tested fungi is Potato Dextrose Agar, where Fluconazole was used standard antifungal agent.

b) Agar well diffusion method

Synthetic compound was prepared at concentration 10 mg/mL dissolved in DMSO as stock solutions. Preparation of sterilized Mueller Hinton agar plates seeded with tested pathogenic bacteria occurred. The wells are done by sterilized cork borer in size 6 mm and hence 200 µg of the synthetic compound was poured in each well comparably with DMSO as control. The plates were incubated at 37°C for 24 h. after incubation period; antimicrobial activity was determined by inhibition zones.

c) Minimum Inhibitory Concentration (MIC)

Different dilutions of the compound are inoculated with tested pathogenic microbes. After incubation period of 96 well microplate, the results are measured using microplate reader. To determine at what level the MIC endpoint is established; subculture of test samples at different concentrations occurred in nutrient agar plates.



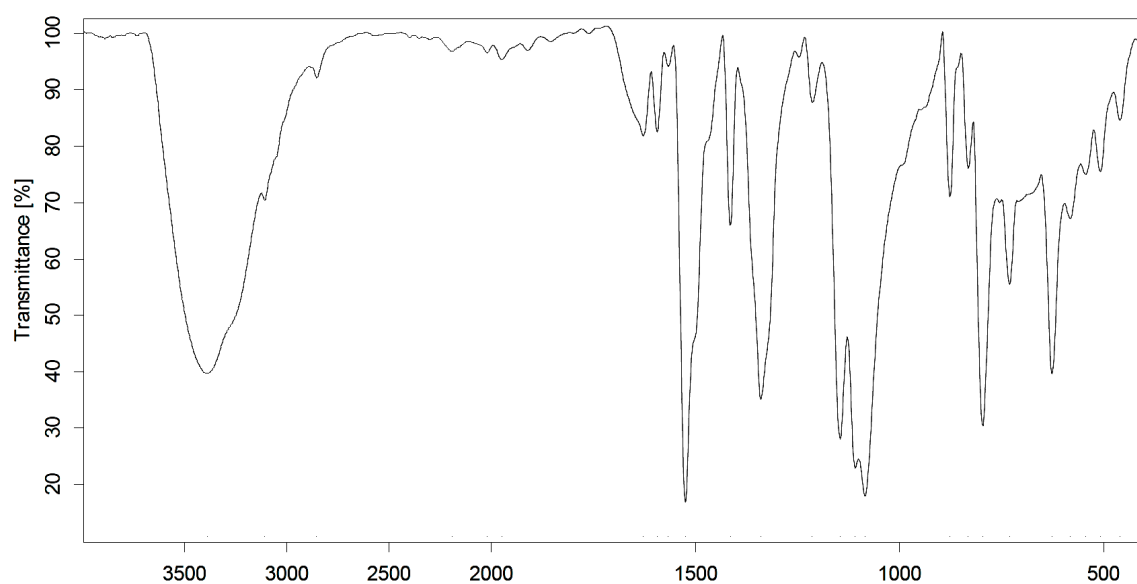


Figure S1. FTIR spectra of 5-nitroquinoline (upper) and [Ag(5-nitroquinoline)₂]ClO₄ complex (lower).

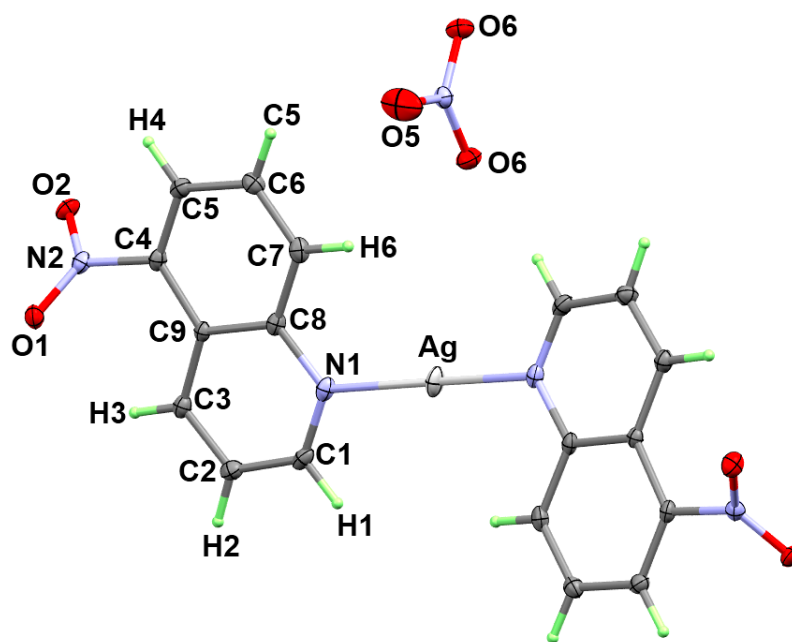


Figure S2. Atom numbering of [Ag(5-NO₂Quin)₂]NO₃.

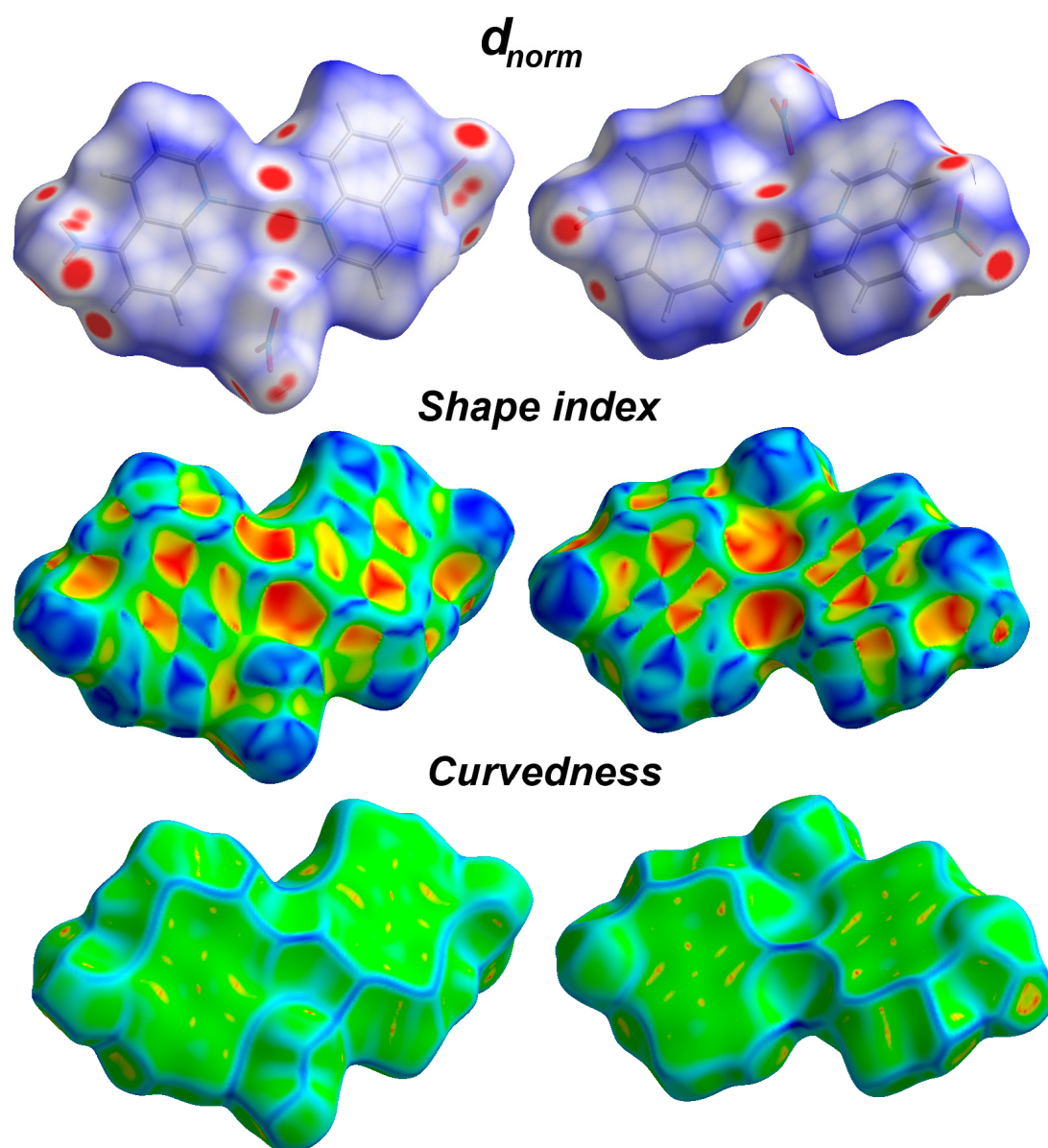


Figure S3. Hirshfeld surfaces of $[\text{Ag}(\text{5-NO}_2\text{Quin})_2]\text{NO}_3$.