**Supplementary file**

**Cobalt iron oxide conjugated tin oxide nanocomposite for antibacterial activity against multidrug-resistant *E. coli* isolated from urinary tract infections**

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Table S1: Frequency of *E. coli* in the urinary tract infections among study population

|  |  |  |  |
| --- | --- | --- | --- |
| **Factors** | ***E. coli* growth (%)** | **Total****(%)** | **p-value** |
| **Positive =57(42.53)** | **Negative=77 (57.47)** |
| **Age (Years)** |
| ≤15 | 9 (15.78%) | 7(9.09%) | 16(11.95%) | 0.03 |
| 16-30 | 12 (21.06%) | 17(22.08%) | 29(21.65%) |
| 31-45 | 11 (19.30%) | 17(22.08%) | 28(20.89%) |
| 46-60 | 13 (22.80%) | 12(15.58%) | 25(18.65%) |
| ≥61 | 12 (21.06%) | 24(31.17%) | 36(26.86%) |
| **Sex** |
| Male | 21(36.85%) | 27(35.06%) | 48(35.82%) | 0.00 |
| Female | 36(63.15%) | 50(64.94%) | 86(64.18%) |

Table S2: Antibiotics susceptibility patterns of *E. coli* isolated from patients with UTIs (%)

|  |  |  |
| --- | --- | --- |
| **Antibiotic Classes** | **Antibiotics** | ***E. coli* (n=57)** |
| **S** | **I** | **R** |
| Aminoglycosides | GM | 43 (75.43%) | 2 (3.50%) | 12 (21.05%) |
| AK | 52 (91.22%) | 0 | 5 (8.77%) |
| Cephalosporins | CE | 16 (28.07%) | 1 (1.75%) | 40 (70.17%) |
| CXM | 27 (47.36%) | 0 | 30 (52.63%) |
| CRO | 21 (36.85%) | 2 (3.50%) | 34 (59.64%) |
| CFM | 24 (42.10%) | 2 (3.50%) | 31 (54.38%) |
| Penicillins + β-lactamase inhibitors | AUG | 44 (77.19%) | 0 | 13 (22.80%) |
| Tetracyclines | DXT | 34 (59.65%) | 1 (1.75%) | 22 (38.59%) |
| Folate pathway inhibitors | TS | 28 (49.12%) | 0 | 29 (50.87%) |
| Fluoroquinolones | CIP  | 33 (57.90%) | 7 (12.28%) | 17 (29.82%) |
| LEV | 40 (70.17%) | 3 (5.26%) | 14 (24.50%) |
| Nitrofuran | NI | 52 (91.22%) | 2 (3.50%) | 3 (5.26%) |
| Macrolides | ATH | 22 (38.59%) | 1(1.75%) | 34 (59.64%) |
| Carbapenems | IMI  | 100 (100%) | 0 | 0 |
| MEM  | 55 (96.49%) | 1 (1.75%) | 1 (1.76%) |
| Oxazolidinones | LZD | 34 (59.65%) | 1 (1.75%) | 22 (38.59%) |

**Legend:** GM=Gentamicin, AK= Amikacin, CE=Cephradine, CXM= Cefuroxime sodium, CRO=Ceftriaxone, CFM=Cefixime, AUG =Amoxicillin + Clavulanic Acid, DXT=Doxycycline, TS=Co-trimoxazole (sulfamethoxazole and trimethoprim), CIP=Ciprofloxacin, LEV=Levofloxacin, NI= Nitrofurantoin, ATH= Azithromycin, IMI=Imipenem, MEM=Meropenem, LZD= Linezolid, S=Sensitive, I= Intermediate, R= Resistant.



**Figure S1**: Antibacterial activity of different concentrations of SnO2 nanoparticles



**Fig. S2**: Antibacterial activity of different concentrations of SnO2 - CoFe2O4 nanocompositenanoparticles