Supplementary Material

**TABLE 1** Characteristics and medical applications of metal and metal-oxid/sulfide NPs.

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| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Terminalia arjuna* | *Cytobacillus firmus* | Ag NPs  30-45 nm  spherical | Antimicrobial  (*S. aureus* and *E. coli*) | (Sudarsan  et al., 2021) |
| *Limonia acidissima* | *Penicillium oxalicum* LA-1 | Ag NPs  52 nm  spherical | Antimicrobial  (*K. pneumonia* MTCC-530, *V. cholerae* MTCC 3906; *E. coli* MTCC-1687, *Micrococcus luteus* MTCC 1809, *Mycobacterium smegmatis* MTCC-994 and *B. subtilis* MTCC-2387)  Anticancer  (MDA-MB-231) | (Seetharaman  et al., 2021) |
| *Nyctanthes*  *arbor-tristis* | *Phomopsis helianthi* | Ag NPs  35.05 nm  spherical, pentagonal, hexagonal | Antimicrobial  (*E. coli*, *Staphylococcus*  sp., *Morganella morgenii*, *Proteus vulgaris*, *P.aeruginosa*, *Salmonella enteritidis* and *Shigella boydii*) | (Gond  et al., 2019) |
| *Tragia involvucrata* | *Penicillium citrinum* CGJ-C2 | Ag NPs  2-20 nm  spherical | Anticancer  (A431, HepG2 and MCF-7 cells)  Antioxidant | (Danagoudar  et al., 2020) |
| *Dendrophthoe falcata* | *Cladosporium perangustum* | Ag NPs  30-40 nm  spherical | Anticancer  (MCF-7 cells),  Antioxidant | (Govindappa  et al., 2020) |
| *Catharanthus roseus* (Linn.) | *Botryosphaeria rhodina* | Ag NPs  2-50 nm  spherical, rectangular,  triangular | Anticancer  (A549 cells),  Antioxidant | (Akther  et al., 2019) |
| *Glycosmis mauritiana* | *Penicillium* sp. | Ag NPs  65 nm  spherical | Antimicrobial  (*S. aureus*, *E. coli* and *P. aeruginosa*),  Anti-inflamatory,  Antioxidant,  Tyrosine inhibitory | (Govindappa  et al., 2016) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Borszczowia aralocaspica* | *Isoptericola* sp. | Ag NPs  11-40 nm  spherical | Antimicrobial  (*Staphyloccocus warneri* ATCC 27836) | (Dong et al., 2017) |
| *Achillea fragrantissima* | *Streptomyces laurentii* | Ag NPs  7-15 nm  spherical | Antimicrobial  (*B. subtilis* ATCC 6633, *P. aeruginosa* ATCC 9022, *E. coli* ATCC 8739,  Anticancer  (Caco-2 cells) | (Eid et al., 2020) |
| *Raphanus sativus* | *Alternaria* sp*.* | Ag NPs  4-30 nm  spherical | Antimicrobial  (Methicillin-resistant *B. subtilis* MTCC 441, *S. aureus* MTCC 740, *E. coli* MTCC 443 and *Serratia marcescens* MTCC 97) | (Singh et al., 2017) |
| *Azadirachata indica* | *Guignardia mangiferae* | Ag NPs  5-30 nm  spherical | Antimicrobial  (*E. coli* ATCC 8739, *P. mirabilis* (MTCC 425), *K. pneumoniae* ATCC 2719, *P. aeruginosa* ATCC 27853, *S. aureus* ATCC 29736, *S. epidermidis* MTCC 3086, *E. faecalis* ATCC 29212 and *Bacillus subtilis* ATCC 6633)  Anticancer  (Vero, HeLa and MCF-7 cells) | (Balakumaran et al., 2015) |
| *Calotropis procera* | *Pencillium* sp*.*  *Alternaria* sp*. Aspergillus* sp*.*  *Cladosporium* sp*.* | Ag NPs | Antimicrobial  (*B. subtilis* and *E. coli*),  Antioxidant | (Chowdhury  et al., 2016) |
| *Calotropis procera* | *Penicillium chrysogenum, Aspergillus fumigatus, Aspergillus flavus* | Ag NPs  4-26 nm  spherical | Antimicrobial  (*P. aeruginosa*, *E. coli*, *K. pneumoniae*, *Salmonella* sp. and *S. marcescens*) | (Mohamed et al., 2019) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Rhizophora mangle, Laguncularia racemosa* | *Aspergillus tubingensis, Bionectria ochroleuca* | Ag NPs  35 nm | Antimicrobial  (*E. coli* ATCC 25922, *P. aeruginosa* ATCC 27853, *Micrococcus luteus* ATCC 10240, *S. aureus* ATCC 25923, *C. albicans* ATCC 36802/IOC 3704,  *C. albicans* IOC 4525, *C. albicans* IOC 4558, *C. krusei* IOC  4559, *Candida glabrata* IOC 4565, *Candida parapsilosis* IOC 4564,  *Candida tropicalis* IOC 4560 and *Candida guilliermondii* IOC4557) | (Rodrigues et al., 2013) |
| *Stypandra glauca* | *Aspergillus niger* | Ag NPs  41.9 nm | Antimicrobial  (*E. coli*, *P. aeruginosa*, *K. pneumonia* and *S. aureus*),  Antioxidant | (Hemashekhar et al., 2017) |
| *Ocimum tenuiflorum* | *Exserohilum rostrata* | Ag NPs  10-15 nm  spherical | Antimicrobial  *E. coli*, *K. pneumoniae*, *P. aeruginosa* and *S. aureus*,  Anticancer  (MCF-7 and MDAMB231)  Antioxidant,  Anti-inflamatory,  Hemolytic Activity, | (Bagur et al., 2020b) |
| *Tinospora cordifolia* | *Penicillium* sp*.* | Ag NPs  12 nm  spherical | Antimicrobial  (*E. coli*, *K. pneumoniae*, *P. aeruginosa* and *S. aureus*),  Antioxidant,  Anti-inflamatory,  Antimitotic | (Bagur et al., 2020a) |
| *Datura metel* | *Colletotrichum incarnatum* | Ag NPs  5-25 nm  spherical | Antibiofilm  (*B. cereus* and *V. cholerae*)  Thrombin activity, | (Chandankere et al., 2020) |
| *Gloriosa superba* | *Alternaria solani*  *Penicillium funiculosum* | Ag NPs  5-20 nm  spherical | Antimicrobial  (*Streptococcus pyogenes* MTCC1925, *E. coli* MTCC730, *E. faecalis* MTCC2729, *C. albicans* MTCC183) | (Devi et al., 2014) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Bertholletia excelsa* | *Trichoderma* spp*.* | Ag NPs  10-25 nm | Antimicrobial  (*S. aureus* ATCC 6538, *E. faecalis* ATCC 29,212, *P. aeruginosa* ATCC 25853 and *E. coli* ATCC 8739) | (Ramos et al., 2020) |
| *Centella asiatica* | *Aspergillus versicolor* | Ag NPs  15.5 nm, spherical | Antimicrobial  (*S. aureus*, *S. pneumoniae*, *P. aeruginosa* and *K. pneumoniae*)  Antioxidant | (Netala  et al., 2016b) |
| *Sargassum wightii* | *Cladosporium cladosporioides* | AgNPs  30-60 nm | Antimicrobial  (*E. coli* MTCC 118, *S. aureus* MTCC 7443, *B. subtilis* MTCC 441, *S. epidermis* MTCC 435 and *C. albicans* MTCC 183)  Antioxidant | (Manjunath and Joshi, 2017) |
| *Chaetomorpha antennina* | *Penicillium polonicum* | Ag NPs  15 nm | Antimicrobial  (Multidrug-resistant *A. baumanii*) | (Neethu et al., 2018) |
| *Garcinia xanthochymus* | *Bacillus cereus* | Ag NPs  20-40 nm  spherical | Antimicrobial (*E. coli* ATCC 25922, *P. aeruginosa* ATCC 27853, *S. aureus* ATCC 25923, *Salmonella typhi* ATCC 6539, *K. pneumoniae* NCIM 2883) | (Sunkar and Nachiyar, 2012) |
| *Commiphora wightii* | *Cladosporium* sp*.* | Au NPs  spherical  10 nm | Anticancer (MCF-7 cells) | (Munawer et al., 2020) |
| *Rauvolfia tetraphylla,* | *Alternaria* sp. | Au NPs  28 nm  triangular | Antibacterial  (*E. coli and P. aeruginosa*)  Antimitotic  (*Allium cepa* root bulbs)  Antioxidant | (Hemashekhar et al., 2019) |
| *Cleistes fragrans* | *Fusarium solani* | Au NPs  Needle | Anticancer (HEK, HeLa and MCF-7) | (Clarance et al. 2020) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Coffea arabica* | *Pseudomonas fluorescens* 417 | Au NPs  5-50 nm  spherical | Antimicrobial(*P. aeruginosa* MTCC 7903, *E. coli* MTCC 7410, *S. aureus* MTCC 7443, *B. subtilis* MTCC 121, *K. pneumoniae* MTCC 7407) | (Syed  et al., 2016) |
| *Calendula arvensis* | *Streptomyces capillispiralis* | Cu NPs  3.6-59 nm  spherical | Antimicrobial  (*S. aureus* ATCC 6538, *B. subtilis* ATCC 6633, *Bacillus diminuta* ATCC 19146, *P. aeruginosa* ATCC 9022, *E. coli* ATCC 8739, *C. albicans* ATCC 10231, *Aspergillus brasiliensis* ATCC 16404) | (Hassan et al., 2018) |
| *Aegle marmelos* | *Aspergillus terreus*FC36AY1 | CuO NPs  60-100 nm  spherical | Antimicrobial (*S. typhi, S. aureus, P. irabilis, P. aeruginosa, K. pneumoniae, E. coli, V. cholerae, S. epidermidis, C. albicans*) Anticancer and  (HT-29),  Antiangiogenesis, Antioxidant | (Mani  et al., 2021) |
| *Nothapodytes foetida* | *Aspergillus flavus* | ZnS NPs  12-24 nm  spherical | Antimicrobial  (*E. coli*) | (Uddandarao et al., 2016) |

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| *Millingtonia hortensis* | *Xylaria acuta* | ZnO NPs  34-55 nm  hexagonal | Antimicrobial (*B. cereus* NCIM No 2016*, S. aureus* NCIM No 2079*, P. aeruginosa* NCIM No 2200*, E. coli* NCIM No 2556)  Anticancer (MDA-MB 134) | (Sumanth  et al., 2020) |
| Mango tree | *Aspergillus niger* | ZnO NPs  60-80 nm  spherical | Antimicrobial *Propionibacterium acnes* MCMB-855 | (Kulkarni and Ramakrishna, 2020) |
| *Balanites aegyptiaca* | *Periconium* sp*.* | ZnO NPs  16-78 nm  spherical | Antimicrobial (*E. coli, S. aureus and C. albicans*)  Antioxidant | (Ganesan et al., 2020) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets**  **(in vitro assays)** | **References** |
| *Origanum majorana* | *Aspergillus terreus* ORG-1 | ZnO NPs  30.45 nm  rods | Antimicrobial (*P. aeruginosa* ATCC 9027*, K. pneumoniae* ATCC 13883*, E. coli* ATCC 10536*, S. aureus* ATCC 6538, *Aspergillus brasiliensis* ATCC16404,  *C. albicans* ATCC10231) | (Mousa et al., 2021) |
| *Origanum majorana* | *Aspergillus terreus* ORG-1 | Co3O4 NPs  10.35 nm  rods | Antimicrobial (*P. aeruginosa* ATCC 9027*, K. pneumoniae* ATCC 13883*, E. coli* ATCC 10536*, S. aureus* ATCC 6538, *Aspergillus brasiliensis* ATCC16404, *C. albicans* ATCC10231) | (Mousa et al., 2021) |
| *Origanum majorana* | *Aspergillus terreus* ORG-1 | NiO NPs  42.51 nm  rods | Antimicrobial (*P. aeruginosa* ATCC 9027*, K. pneumoniae* ATCC 13883*, E. coli* ATCC 10536*, S. aureus* ATCC 6538, *Aspergillus brasiliensis* ATCC16404, *C. albicans* ATCC10231) | (Mousa et al., 2021) |
| *Origanum majorana* | *Aspergillus terreus* ORG-1 | Fe3O4 NPs  32.41 nm  rods | Antimicrobial (*P. aeruginosa* ATCC 9027*, K. pneumoniae* ATCC 13883*, E. coli* ATCC 10536*, S. aureus* ATCC 6538, *Aspergillus brasiliensis* ATCC16404, *C. albicans* ATCC10231) | (Mousa et al., 2021) |
| *Sorghum bicolor* | *Trichoderma citrinoviride* | TiO2 NPs  10-400 nm  triangular, pentagonal, spherical, rod | Antimicrobial (*P. aeruginosa)* Antioxidant | (Arya et al., 2021) |