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 NPs30-45 nmspherical | Antimicrobial(*S. aureus* and *E. coli*) | (Sudarsanet al., 2021) |
| *Limonia acidissima* | *Penicillium oxalicum* LA-1 | Ag NPs52 nmspherical | 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) | (Seetharamanet al., 2021) |
| *Nyctanthes**arbor-tristis* | *Phomopsis helianthi* | Ag NPs35.05 nmspherical, pentagonal, hexagonal | Antimicrobial(*E. coli*, *Staphylococcus*sp., *Morganella morgenii*, *Proteus vulgaris*, *P.aeruginosa*, *Salmonella enteritidis* and *Shigella boydii*) | (Gondet al., 2019) |
| *Tragia involvucrata* | *Penicillium citrinum* CGJ-C2 | Ag NPs2-20 nmspherical | Anticancer(A431, HepG2 and MCF-7 cells)Antioxidant | (Danagoudaret al., 2020) |
| *Dendrophthoe falcata* | *Cladosporium perangustum* | Ag NPs30-40 nmspherical | Anticancer(MCF-7 cells),Antioxidant | (Govindappaet al., 2020) |
| *Catharanthus roseus* (Linn.) | *Botryosphaeria rhodina* | Ag NPs2-50 nmspherical, rectangular,triangular | Anticancer(A549 cells),Antioxidant | (Aktheret al., 2019) |
| *Glycosmis mauritiana* | *Penicillium* sp. | Ag NPs65 nmspherical | Antimicrobial(*S. aureus*, *E. coli* and *P. aeruginosa*),Anti-inflamatory,Antioxidant,Tyrosine inhibitory | (Govindappaet al., 2016) |
| **Tropical Plant** | **Endophyte** | **Nanoparticle type, average size and shape** | **Applications and targets****(in vitro assays)** | **References** |
| *Borszczowia aralocaspica* | *Isoptericola* sp. | Ag NPs11-40 nmspherical | Antimicrobial(*Staphyloccocus warneri* ATCC 27836) | (Dong et al., 2017) |
| *Achillea fragrantissima* | *Streptomyces laurentii* | Ag NPs7-15 nmspherical | 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 NPs4-30 nmspherical | 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 NPs5-30 nmspherical | 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 NPs4-26 nmspherical | 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 NPs35 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* IOC4559, *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 NPs41.9 nm | Antimicrobial(*E. coli*, *P. aeruginosa*, *K. pneumonia* and *S. aureus*),Antioxidant | (Hemashekhar et al., 2017) |
| *Ocimum tenuiflorum* | *Exserohilum rostrata*  | Ag NPs10-15 nmspherical | 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 NPs12 nmspherical | Antimicrobial(*E. coli*, *K. pneumoniae*, *P. aeruginosa* and *S. aureus*),Antioxidant,Anti-inflamatory,Antimitotic | (Bagur et al., 2020a) |
| *Datura metel* | *Colletotrichum incarnatum* | Ag NPs5-25 nmspherical | Antibiofilm(*B. cereus* and *V. cholerae*)Thrombin activity,  | (Chandankere et al., 2020) |
| *Gloriosa superba* | *Alternaria solani* *Penicillium funiculosum* | Ag NPs5-20 nmspherical | 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 NPs10-25 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* | AgNPs30-60 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 NPs15 nm | Antimicrobial(Multidrug-resistant *A. baumanii*) | (Neethu et al., 2018) |
| *Garcinia xanthochymus* | *Bacillus cereus*  | Ag NPs 20-40 nmspherical | 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 NPsspherical10 nm | Anticancer(MCF-7 cells) | (Munawer et al., 2020) |
| *Rauvolfia tetraphylla,* | *Alternaria* sp. | Au NPs28 nmtriangular | Antibacterial (*E. coli and P. aeruginosa*)Antimitotic(*Allium cepa* root bulbs)Antioxidant | (Hemashekhar et al., 2019) |
| *Cleistes fragrans* | *Fusarium solani* | Au NPsNeedle | 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 NPs5-50 nmspherical  | 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 NPs3.6-59 nmspherical | 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 nmspherical | 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 NPs12-24 nmspherical | Antimicrobial (*E. coli*) | (Uddandarao et al., 2016) |

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| *Millingtonia hortensis* | *Xylaria acuta* | ZnO NPs34-55 nmhexagonal | 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 NPs60-80 nmspherical  | Antimicrobial*Propionibacterium acnes* MCMB-855 | (Kulkarni and Ramakrishna, 2020) |
| *Balanites aegyptiaca* | *Periconium* sp*.* | ZnO NPs16-78 nmspherical  | 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 nmrods | 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 nmrods | 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 nmrods | 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 nmrods | 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 NPs10-400 nmtriangular, pentagonal, spherical, rod | Antimicrobial(*P. aeruginosa)*Antioxidant | (Arya et al., 2021) |