

Supplementary Materials: Traditional Herbal Remedies with a Multifunctional Therapeutic Approach as an Implication in COVID-19 Associated Co-Infections

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Table S1. (A) Morphological and Biochemical characteristics of the isolates. (*S. aureus*, *P. aeruginosa* and *E. coli*).

Identification Criteria	Characteristics	<i>S. aureus</i>	<i>E. coli</i>	<i>P. aeruginosa</i>
Cultural characteristics	Colour	Shiny yellow	Grayish white	Grayish
	Margin	Entire	Irregular	Entire
	Elevation	Convex	Convex	Flat
	Opacity	Opaque	Opaque	Opaque
	Pigmentation	Golden yellow	No	Green
Morphological characteristics	Gram stain Reaction	+ve	–ve	–ve
	Shape	Spherical	Rods	Rods
Biochemical Characteristics	Motility test	–ve	+ve	+ve
	Gelatinase test	+ve	–ve	+ve
	Indole test	–ve	+ve	–ve
	M.R	+ve	–ve	–ve
	V.P	–ve	–ve	–ve
	Citrate utilization test	–ve	–ve	+ve
	Nitrate reduction test	+ve	+ve	+ve
	Urease	–ve	–ve	+ve
	Catalase	+ve	+ve	+ve
	Oxidase	–ve	–ve	+ve
	H ₂ S production test	–ve	–ve	–ve
	ONPG test	–ve	–ve	–ve
-	Lysine	–ve	+ve	–ve
	Arginine	–ve	–ve	+ve

-	Ornathine	-ve	-ve	-ve
-	Coagulase	+ve	NT	NT
-	Bile esculin	-ve	-ve	+ve
-	Haemolysis (blood agar)	+ve	NT	NT
Carbon Source	D-Glucose	+ve	+ve (G)	+ve
	Lactose	+ve	+ve	-ve
	Maltose	+ve	+ve	-ve
	Sucrose	+ve	+ve	-ve
	D-Mannitol	+ve	+ve	-ve
	Fructose	+ve	+ve	+ve
	L-Arabinos	-ve	+ve	-ve
	Raffinose	-ve	-ve	-ve
	Galactose	+ve	+ve	-ve
	D-Xylose	-ve	+ve	-ve
	D-Sorbitol	+ve	+ve	-ve

+ve: Positive, -ve: Negative, +ve (G): Positive with gas production, NT: Not Tested.

Table S1. (B) Morphological and Biochemical characteristics of the isolates (*Serratia spp.*, *Enterobacter spp.* and *Morexella catarrhalis*).

Identification Criteria	Characteristics	<i>Serratia Spp.</i>	<i>Enterobacter Spp.</i>	<i>Morexella Catarrhalis</i>
Cultural characteristics	Colour	Off-white	Dull whitish	Yellowish
	Margin	Entire	Entire	Entire
	Elevation	Flat	Flat	Flat
	Opacity	Opaque	Opaque	Opaque
	Pigmentation	No	No	Dark brown/purple
Morphological characteristics	Gram stain	–ve	–ve	–ve
	Reaction			
	Shape	Rods	Rods	Diplococci
Biochemical Characteristics	Motility test	+ve	+ve	–ve
	Gelatinase test	+ve	–ve	–ve
	Indole test	–ve	–ve	–ve
	M.R	–ve	–ve	–ve
	V.P	–ve	–ve	–ve
	Citrate utilization test	+ve	+ve	+ve
	Nitrate reduction test	+ve	+ve	+ve
	Urease	–ve	–ve	+ve
	Catalase	+ve	+ve	+ve
	Oxidase	–ve	–ve	+ve
	H ₂ S production test	+ve	–ve	–ve
-	ONPG test	+ve	+ve	–ve
-	Lysine	+ve	+ve	–ve
-	Arginine	+ve	+ve	+ve
-	Ornathine	+ve	+ve	–ve
-	Coagulase	N.T	N.T	NT
-	Bile esculin	+ve	–ve	–ve
-	Haemolysis (blood agar)	NT	NT	-
Carbon Source	D-Glucose	+ve	+ve (G)	w/+ve
	Lactose	+ve	+ve	–ve
	Maltose	+ve	+ve	–ve
	Sucrose	+ve	w/+	–ve
	D-Mannitol	+ve	+ve	–ve
	Fructose	–ve	–ve	–ve
	L-Arabinos	–ve	–ve	–ve
	Raffinose	–ve	–ve	–ve
	Galactose	–ve	–ve	–ve
	D-Xylose	–ve	+ve	–ve
	D-Sorbitol	–ve	–ve	–ve

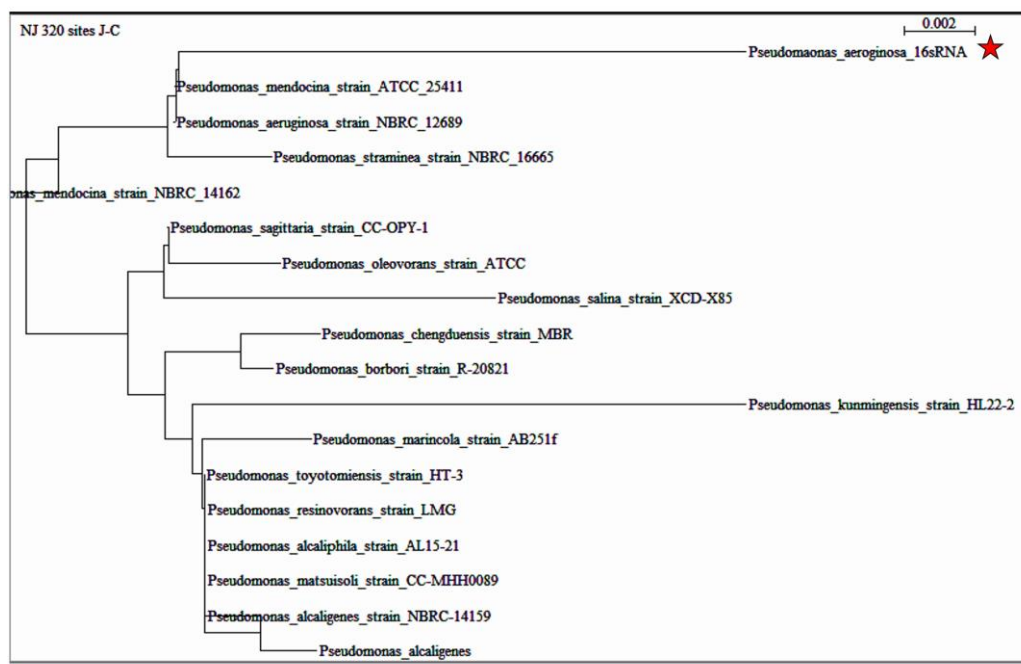
+ve: Positive, –ve: Negative, +ve (G): Positive with gas production, NT: Not Tested.

Molecular identification of the isolates

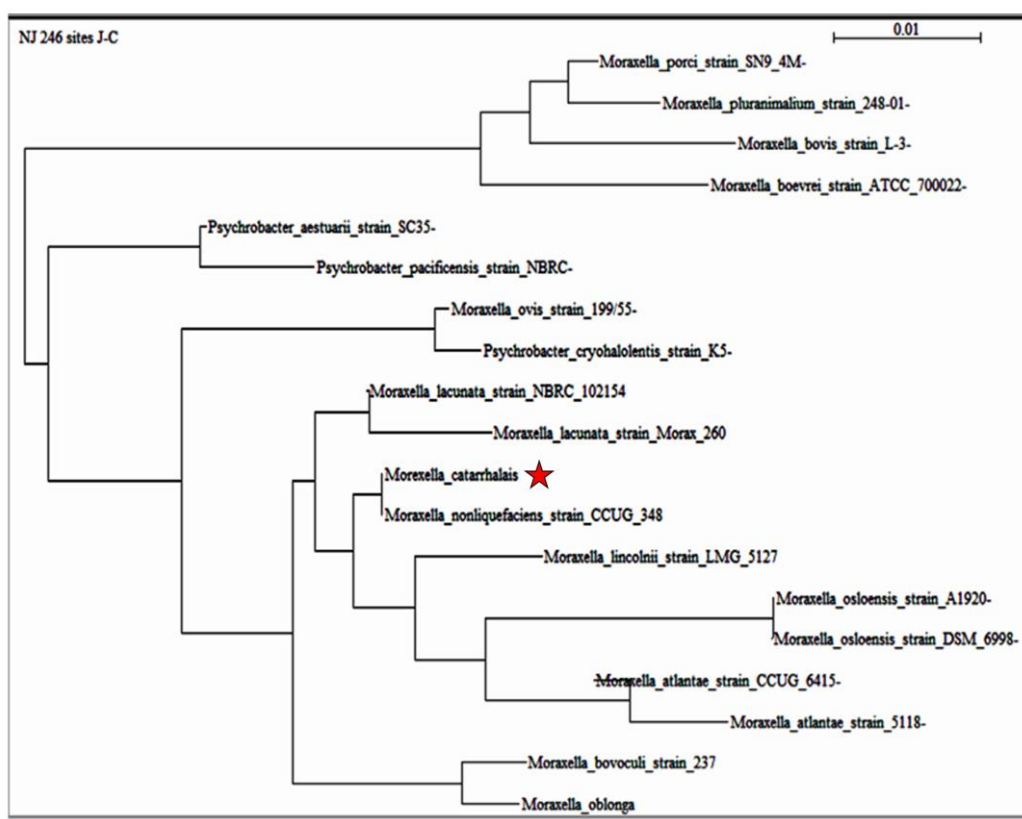
Table S2. DNA sequences of pathogenic microbial isolates.

Bacterial Isolates	Sequences	Amplicon Size (bp)
<i>P. aeruginosa</i>	ATAAAAGGTTCCGACCGCCCGCTAGAAAACGGGCC GCAAGGTTAAAACTCAAATGAATTGACGGGGGCCCCG CACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAA CGCGAAGAACCTTACCTGGCCTTGACATGCTGAGAA CTTTCCAGAGATGGATTGGTGCCTTCGGGAACTCAGA CACAGGTGCTGCATGGCTGTCGTCAGCTCGTGTCTGTG AGATGTTGGGTTAAGTCCCGTAACGAGCGCAACCCTT GTCCTTAATTACCAGCACCTCGGGTGGGCACTCTAAG GAGACTGCCGGTGACAAACCGGACGAAGGTGGGGA TGACGTCCCGTCATCATGGCCCTTACTGGC	357
<i>E. coli</i>	CSCYGAGTCGACTTGGAGGTTGTGCCCTTGAGGCGTG GCTTCCGGAGCTAACGCGTTAAGTCGACCGCCTGGG GAGTACGGCCGCAAGGTTAAAACTCAAATGAATTGA CGGGGGCCCCGACAAGCGGTGGAGCATGTGGTTTAA TTCGATGCAACGCGAAGAACCTTACCTGGTCTTGACA TCCACAGAACTTTCCAGAGATGGATTGGTGCCTTCGG GAACTGTGAGACAGGTGCTGCATGGCTGTCGTCAGCT CGTGTTGTGAAATGTTGGGTTAAGTCCCGCAACGAGC GCAACCCCTTATCCTTTGTTGCCACGCGGTCCGGCCGG GAACTCAAAGGAGACTGCCAGTGATAAACTGGAGG AAGGTGGGGATGACRTCMAGTCATCATGGGCCTTAC GACCACGGCTACCMCSTGCTACAATGGCGCATAACWA AGAGAACGACCTCCCGAGAGCAAGYGGACCTCMTA AACTGCGTCTGGGGCGCGGGGTGGARWYTGGGCCTC CCCYCCCTRT	518
<i>Morexella catarrhalis</i>	CGTATGGGTCTTTTAAAGACTTAGTGACGCAGTTAAC GCAATAAGTAGACCGCCTGGGGAGTACGGCCGCAAG GTTAAAACTCAAATGAATTGACGGGGGCCCCGCACAA GCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGA AGAACCTTACCTGGTCTTGACATAGTGAGAATCTTGC AGAGATGCGAGAGTGCCTTCGGGAATTCACATACAG GTGCTGCATGGCTGTCGTCAGCTCGTGTCTGTGAGATG TTGGGTTAAGTACNNNCCCTCCNNNCNCCCCCCCCCN CNNNCNNNCCNNCNNNNNCNNNCCCCCCCCCNNN NNCNNNCCNNCNNCNNNNCNCNNNCCCCCNNNNNCC CCCCNCNNNNTCNNCCNNNNCNNCTCNCNNNNCNC CNNNCCNNNNNCNNCNCNNNNCNCNNNNNCCCCTCNC NNNNCCNNNNCNCNNCNCNNNNCNCNNNNNNNNC CCCCCNNNNNCCCCNNNNNNNCTCNCNCCCCCCCN CNCCNNNCNNCCCCCNCNCCNNNNCCCCNCCCCCN CNCCC	535
<i>Candida tropicalis</i>	CKGGRWTCTACCTGATTTGAGGTCAAGTTATGAAATA AATTGTGGTGGCCACTAGCAAAATAAGCGTTTTGGAT AAACCTAAGTCGCTTAAATAAGTTTCCACGTTAAAT TCTTTCAAACAAACCTAGCGTATTGCTCAACACCAAA CCCGGGGGTTTGAGGGAGAAATGACGCTCAAACAGG CATGCCCTTTGGAATACCAAAGGGCGCAATGTGCGTT	496

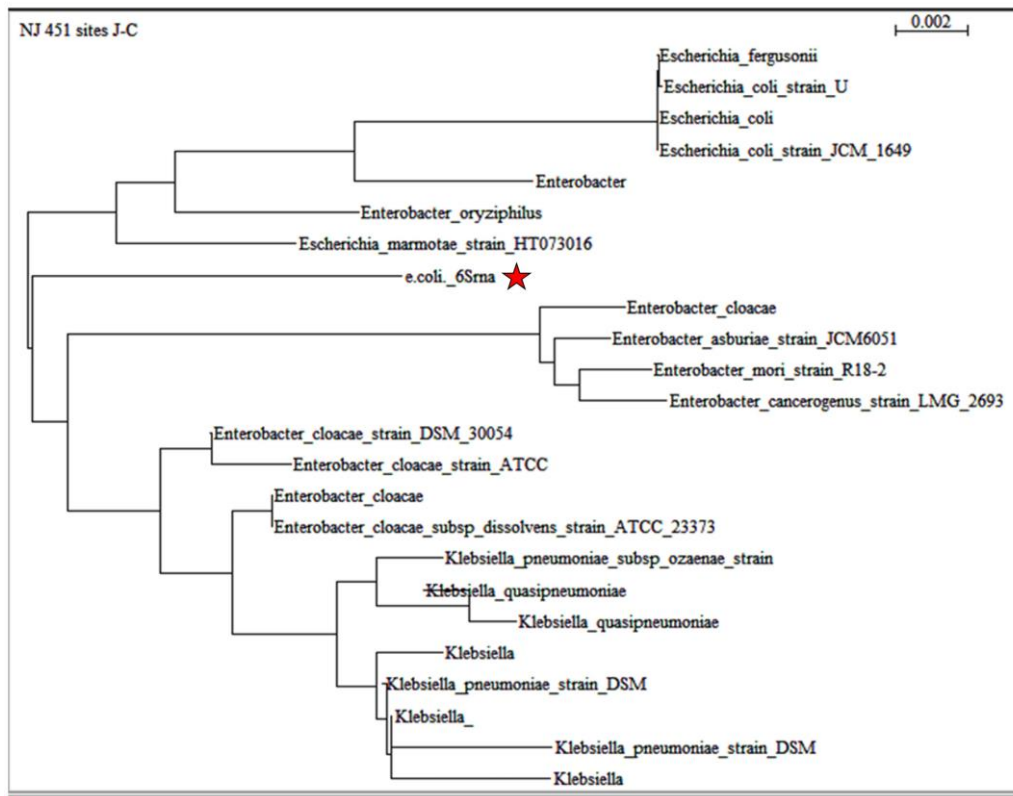
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TTACGTATCGMATTTTCGCTGCGTTCTTCATCGATGCG
AGAACCAARAGATCCGTTGTTGAAAGTTTTGACTATT
GTAATAATAAATCAAGTTTGACTGTAAATAAAAAAGT
TTGGTTTAGTTATAACCTCTGGCGGTAGGATTGCTCCC
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GGKGCAATTAAGCAAATCAGTAATGATCCTTCCGCA
AGGTTACCCCTACGGAAR



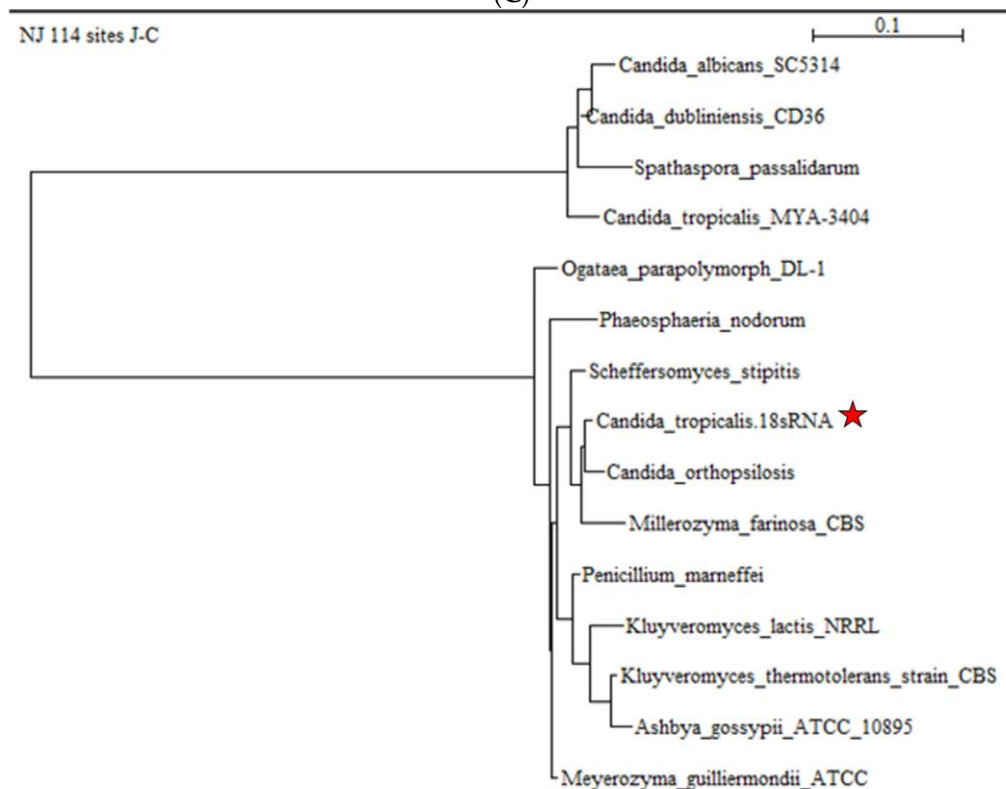
(A)



(B)



(C)



(D)

Figure S1. (A): Phylogenetic tree of *Pseudomonas aeruginosa*. shows the locus of the isolated species of *Pseudomonas aeruginosa*. (B): Phylogenetic tree of *Morexella catarrhalis*. shows the locus of the isolated species of *Morexella catarrhalis*. (C): Phylogenetic tree of *E. coli*. shows the locus of the isolated species of *E. coli*. (D): Phylogenetic tree of *Candida tropicalis*. shows the locus of the isolated species of *Candida tropicalis*.



Figure S2. Isolated microorganisms in Nutrient agar media.

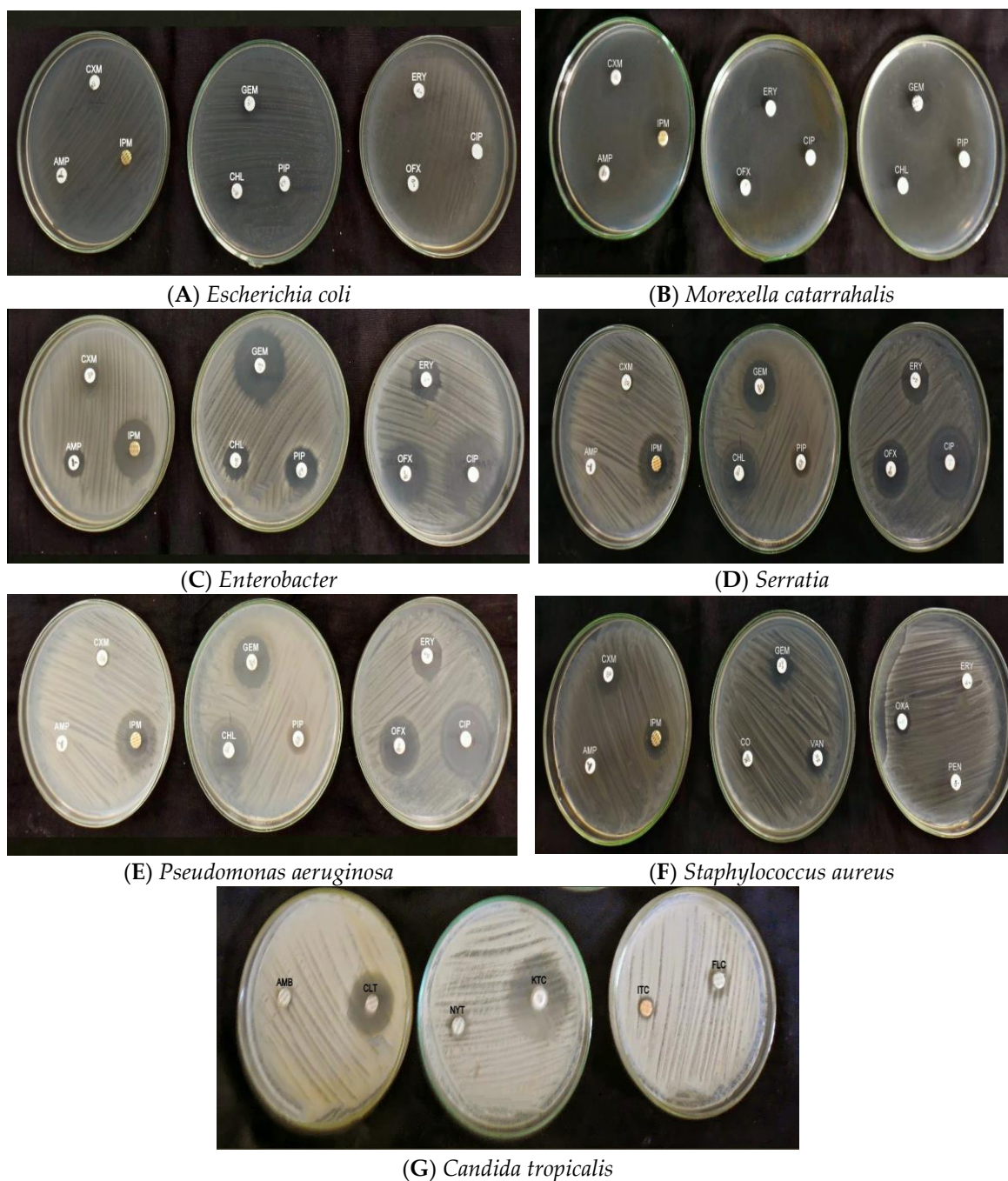


Figure S3. (A–G): Antibiotics and antifungal susceptibility pattern of isolates.



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