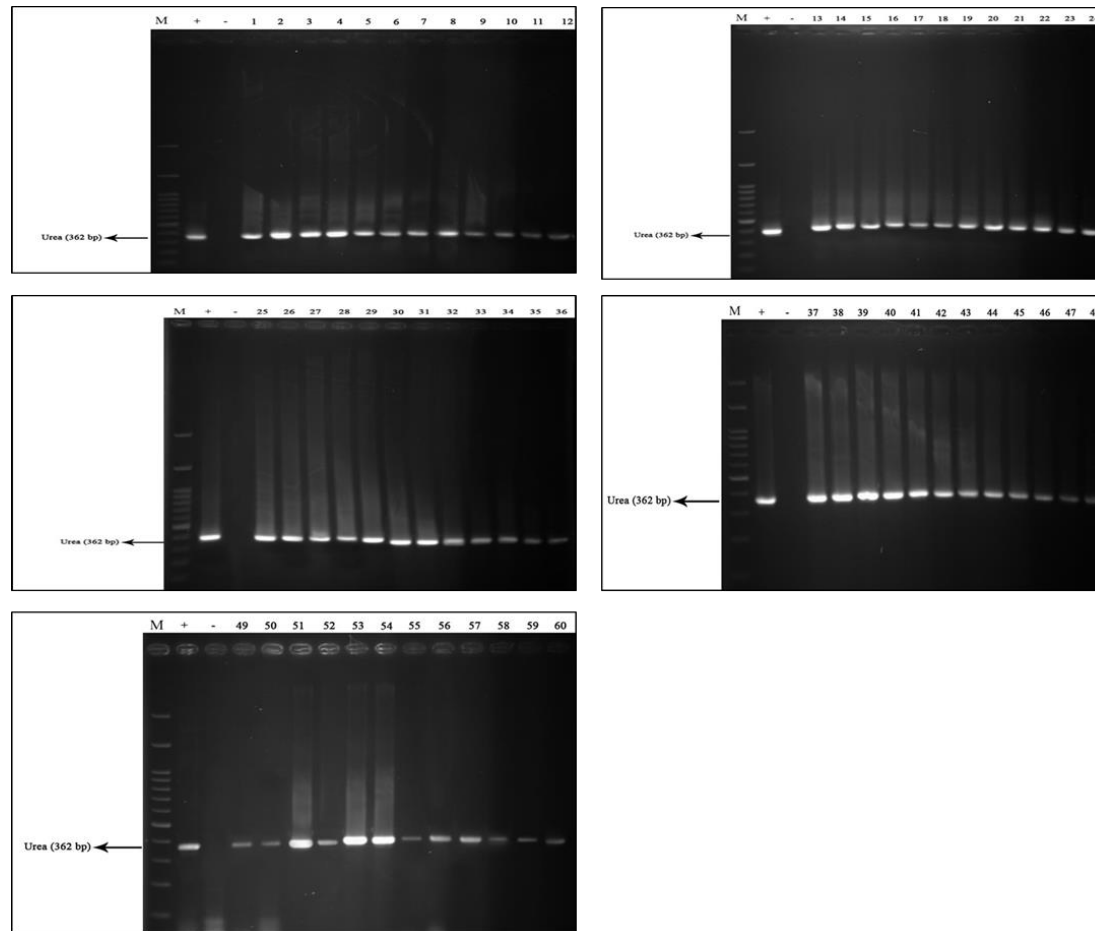




Supplementary Figure S1. Detection of the *urea* gene (362 bp) by PCR. Lanes from left to right represent: DNA Ladder (100 bp, Fermentas), positive control : *Proteus mirabilis* (ATCC 1209), negative control, and clinical isolates numbered 1 to 60.

Supplementary table S1. Antibiotic Susceptibility profile of *Proteus mirabilis* Clinical Isolates Determined by Disk Diffusion Method

NO.	Piperacillin (S,I,R)	Amoxicillin/cl avulanic acid (S,I,R)	Aztreonam (S,I,R)	Imipenem (S,I,R)	Cefoxitin (S,I,R)	Ceftazidime (S,I,R)	Cefotaxime (S,I,R)	Ciprofloxacin (S,I,R)	Cotrimoxazole (S,I,R)	Gentamicin (S,I,R)	Amikacin (S,I,R)
1	20 mm (I)	9 mm (R)	28 mm (S)	25 mm (S)	30 mm (S)	22 mm (S)	30 mm (S)	14 mm (R)	20 mm (S)	25 mm (S)	23 mm (S)
2	0 mm (R)	0 mm (R)	0 mm (R)	30 mm (S)	30 mm (S)	0 mm (R)	0 mm (R)	20 mm (R)	8 mm (R)	25 mm (S)	25 mm (S)
3	14 mm (R)	0 mm (R)	20 mm (I)	6 mm (R)	30 mm (S)	19 mm (I)	9 mm (R)	7 mm (R)	25 mm (S)	27 mm (S)	26 mm (S)
4	25 mm (S)	0 mm (R)	33 mm (S)	24 mm (S)	23 mm (S)	24 mm (S)	29 mm (S)	26 mm (S)	23 mm (S)	19 mm (S)	24 mm (S)
5	24 mm (S)	14 mm (I)	27 mm (S)	26 mm (S)	21 mm (S)	19 mm (I)	29 mm (S)	30 mm (S)	26 mm (S)	16 mm (S)	16 mm (I)
6	21 mm (S)	0 mm (R)	31 mm (S)	26 mm (S)	27 mm (S)	30 mm (S)	27 mm (S)	39 mm (S)	0 mm (R)	25 mm (S)	22 mm (S)
7	20 mm (I)	0 mm (R)	38 mm (S)	13 mm (R)	21 mm (S)	25 mm (S)	27 mm (S)	26 mm (S)	12 mm (I)	25 mm (S)	25 mm (S)
8	25 mm (S)	16 mm (I)	34 mm (S)	23 mm (S)	28 mm (S)	25 mm (S)	32 mm (S)	32 mm (S)	18 mm (S)	27 mm (S)	24 mm (S)
9	25 mm (S)	12 mm (R)	32 mm (S)	18 mm (R)	28 mm (S)	21 mm (S)	31 mm (S)	30 mm (S)	20 mm (R)	30 mm (S)	25 mm (S)
10	13 mm (R)	11 mm (R)	31 mm (S)	24 mm (S)	24 mm (S)	17 mm (R)	25 mm (I)	31 mm (S)	13 mm (I)	25 mm (S)	21 mm (S)
11	24 mm (S)	0 mm (R)	33 mm (S)	20 mm (I)	24 mm (S)	19 mm (I)	30 mm (S)	30 mm (S)	27 mm (S)	25 mm (S)	25 mm (S)
12	25 mm (S)	0 mm (R)	33 mm (S)	17 mm (R)	27 mm (S)	24 mm (S)	29 mm (S)	25 mm (I)	0 mm (R)	24 mm (S)	24 mm (S)
13	14 mm (R)	10 mm (R)	16 mm (R)	5 mm (R)	25 mm (S)	18 mm (I)	12 mm (R)	6 mm (R)	24 mm (S)	5 mm (R)	5 mm (R)
14	0 mm (R)	0 mm (R)	21 mm (S)	6 mm (R)	25 mm (S)	17 mm (R)	10 mm (R)	6 mm (R)	26 mm (S)	6 mm (R)	23 mm (S)
15	16 mm (R)	10 mm (R)	12 mm (R)	25 mm (S)	19 mm (S)	19 mm (I)	21 mm (R)	17 mm (R)	0 mm (R)	19 mm (S)	14 mm (R)
16	25 mm (S)	15 mm (I)	35 mm (S)	25 mm (S)	38 mm (S)	21 mm (S)	30 mm (S)	26 mm (S)	23 mm (S)	30 mm (S)	26 mm (S)
17	25 mm (S)	18 mm (S)	33 mm (S)	18 mm (R)	27 mm (S)	22 mm (S)	30 mm (S)	20 mm (R)	0 mm (R)	23 mm (S)	20 mm (S)
18	26 mm (S)	16 mm (I)	31 mm (S)	35 mm (S)	28 mm (S)	24 mm (S)	32 mm (S)	25 mm (I)	21 mm (S)	27 mm (S)	24 mm (S)
19	21 mm (S)	16 mm (I)	30 mm (S)	26 mm (S)	27 mm (S)	22 mm (S)	23 mm (I)	37 mm (S)	12 mm (I)	29 mm (S)	25 mm (S)
20	27 mm (S)	16 mm (I)	37 mm (S)	43 mm (S)	35 mm (S)	28 mm (S)	35 mm (S)	23 mm (I)	17 mm (S)	26 mm (S)	28 mm (S)

Supplementary table S2. Antibiotic Susceptibility profile of *Proteus mirabilis* Clinical Isolates Determined by Disk Diffusion Method

NO.	Piperacillin (S,I,R)	Amoxicillin/cl avulanic acid (S,I,R)	Aztreonam (S,I,R)	Imipenem (S,I,R)	Cefoxitin (S,I,R)	Ceftazidime (S,I,R)	Cefotaxime (S,I,R)	Ciprofloxacin (S,I,R)	Cotrimoxazole (S,I,R)	Gentamicin (S,I,R)	Amikacin (S,I,R)
21	7 mm (R)	0 mm (R)	20 mm (I)	40 mm (S)	27 mm (S)	15 mm (R)	12 mm (R)	0 mm (R)	0 mm (R)	17 mm (S)	19 mm (S)
22	25 mm (S)	18 mm (S)	32 mm (S)	25 mm (S)	28 mm (S)	22 mm (S)	29 mm (S)	38 mm (S)	22 mm (S)	25 mm (S)	22 mm (S)
23	25 mm (S)	17 mm (I)	33 mm (S)	30 mm (S)	28 mm (S)	22 mm (S)	27 mm (S)	23 mm (I)	20 mm (S)	28 mm (S)	26 mm (S)
24	18 mm (I)	18 mm (S)	25 mm (S)	21 mm (I)	19 mm (S)	17 mm (R)	22 mm (R)	23 mm (I)	14 mm (I)	10 mm (R)	13 mm (R)
25	22 mm (S)	9 mm (R)	28 mm (S)	27 mm (S)	19 mm (S)	18 mm (I)	30 mm (S)	16 mm (R)	26 mm (S)	16 mm (S)	15 mm (I)
26	12 mm (R)	0 mm (R)	29 mm (S)	30 mm (S)	20 mm (S)	19 mm (I)	32 mm (S)	16 mm (R)	0 mm (R)	17 mm (S)	15 mm (I)
27	27 mm (S)	14 mm (I)	30 mm (S)	29 mm (S)	18 mm (S)	20 mm (I)	26 mm (S)	38 mm (S)	0 mm (R)	17 mm (S)	15 mm (I)
28	20 mm (S)	11 mm (R)	33 mm (S)	15 mm (R)	20 mm (S)	20 mm (I)	28 mm (S)	14 mm (R)	15 mm (I)	17 mm (S)	15 mm (I)
29	20 mm (I)	12 mm (R)	28 mm (S)	30 mm (S)	20 mm (S)	16 mm (R)	25 mm (I)	23 mm (I)	0 mm (R)	15 mm (S)	12 mm (R)
30	22 mm (S)	12 mm (R)	17 mm (R)	30 mm (S)	12 mm (R)	20 mm (I)	21 mm (R)	19 mm (R)	21 mm (S)	18 mm (S)	15 mm (I)
31	22 mm (S)	10 mm (R)	28 mm (S)	28 mm (S)	19 mm (S)	17 mm (R)	23 mm (I)	32 mm (S)	13 mm (I)	16 mm (S)	10 mm (R)
32	15 mm (R)	0 mm (R)	30 mm (S)	25 mm (S)	20 mm (S)	19 mm (I)	25 mm (I)	0 mm (R)	0 mm (R)	14 mm (S)	14 mm (R)
33	21 mm (S)	11 mm (R)	27 mm (S)	27 mm (S)	22 mm (S)	20 mm (I)	30 mm (S)	16 mm (R)	19 mm (S)	16 mm (S)	14 mm (R)
34	20 mm (I)	10 mm (R)	25 mm (S)	29 mm (S)	19 mm (S)	16 mm (R)	23 mm (I)	23 mm (I)	24 mm (S)	16 mm (S)	12 mm (R)
35	20 mm (I)	12 mm (R)	26 mm (S)	27 mm (S)	16 mm (I)	16 mm (R)	20 mm (R)	29 mm (S)	0 mm (R)	16 mm (S)	14 mm (R)
36	10 mm (R)	0 mm (R)	17 mm (R)	25 mm (S)	19 mm (S)	20 mm (I)	17 mm (R)	18 mm (R)	14 mm (I)	18 mm (S)	16 mm (I)
37	25 mm (S)	9 mm (R)	28 mm (S)	29 mm (S)	21 mm (S)	23 mm (S)	31 mm (S)	14 mm (R)	0 mm (R)	18 mm (S)	14 mm (R)
38	12 mm (R)	0 mm (R)	20 mm (I)	15 mm (R)	22 mm (S)	16 mm (R)	17 mm (R)	16 mm (R)	16 mm (S)	17 mm (S)	15 mm (I)
39	21 mm (S)	9 mm (R)	22 mm (S)	27 mm (S)	21 mm (S)	17 mm (R)	23 mm (I)	12 mm (R)	9 mm (R)	18 mm (S)	14 mm (R)
40	0 mm (R)	0 mm (R)	11 mm (R)	26 mm (S)	20 mm (S)	10 mm (R)	0 mm (R)	24 mm (I)	0 mm (R)	16 mm (S)	16 mm (I)

Supplementary table S3. Antibiotic Susceptibility profile of *Proteus mirabilis* Clinical Isolates Determined by Disk Diffusion Method

NO.	Piperacillin (S,I,R)	Amoxicillin/cl avulanic acid (S,I,R)	Aztreonam (S,I,R)	Imipenem (S,I,R)	Cefoxitin (S,I,R)	Ceftazidime (S,I,R)	Cefotaxime (S,I,R)	Ciprofloxacin (S,I,R)	Cotrimoxazole (S,I,R)	Gentamicin (S,I,R)	Amikacin ((S,I,R)
41	27 mm (S)	25 mm (S)	20 mm (I)	31 mm (S)	22 mm (S)	23 mm (S)	33 mm (S)	29 mm (S)	25 mm (S)	20 mm (S)	19 mm (S)
42	17 mm (R)	19 mm (S)	18 mm (I)	32 mm (S)	22 mm (S)	22 mm (S)	25 mm (I)	40 mm (S)	25 mm (S)	21 mm (S)	20 mm (S)
43	29 mm (S)	25 mm (S)	16 mm (R)	33 mm (S)	24 mm (S)	25 mm (S)	31 mm (S)	36 mm (S)	22 mm (S)	20 mm (S)	19 mm (S)
44	25 mm (S)	22 mm (S)	17 mm (R)	31 mm (S)	24 mm (S)	21 mm (S)	21 mm (R)	16 mm (R)	25 mm (S)	20 mm (S)	17 mm (S)
45	24 mm (S)	25 mm (S)	20 mm (I)	26 mm (S)	20 mm (S)	19 mm (I)	30 mm (S)	17 mm (R)	0 mm (R)	21 mm (S)	20 mm (S)
46	25 mm (S)	21 mm (S)	18 mm (I)	27 mm (S)	20 mm (S)	21 mm (S)	30 mm (S)	17 mm (R)	0 mm (R)	20 mm (S)	20 mm (S)
47	16 mm (R)	20 mm (S)	0 mm (R)	21 mm (I)	24 mm (S)	17 mm (R)	13 mm (R)	0 mm (R)	0 mm (R)	20 mm (S)	18 mm (S)
48	16 mm (R)	19 mm (S)	0 mm (R)	22 mm (I)	22 mm (S)	17 mm (R)	14 mm (R)	0 mm (R)	0 mm (R)	21 mm (S)	19 mm (S)
49	25 mm (S)	19 mm (S)	12 mm (R)	21 mm (I)	23 mm (S)	20 mm (I)	31 mm (S)	15 mm (R)	30 mm (S)	20 mm (S)	19 mm (S)
50	26 mm (S)	24 mm (S)	19 mm (I)	32 mm (S)	22 mm (S)	23 mm (S)	31 mm (S)	38 mm (S)	0 mm (R)	21 mm (S)	20 mm (S)
51	24 mm (S)	24 mm (S)	17 mm (R)	33 mm (S)	22 mm (S)	12 mm (R)	29 mm (S)	40 mm (S)	25 mm (S)	19 mm (S)	19 mm (S)
52	25 mm (S)	21 mm (S)	17 mm (R)	28 mm (S)	20 mm (S)	22 mm (S)	22 mm (R)	31 mm (S)	25 mm (S)	22 mm (S)	20 mm (S)
53	27 mm (S)	25 mm (S)	20 mm (I)	32 mm (S)	24 mm (S)	22 mm (S)	32 mm (S)	35 mm (S)	25 mm (S)	20 mm (S)	19 mm (S)
54	23 mm (S)	0 mm (R)	22 mm (S)	30 mm (S)	0 mm (R)	15 mm (R)	30 mm (S)	34 mm (S)	29 mm (S)	22 mm (S)	21 mm (S)
55	20 mm (I)	0 mm (R)	20 mm (I)	29 mm (S)	0 mm (R)	15 mm (R)	28 mm (S)	30 mm (S)	28 mm (S)	21 mm (S)	20 mm (S)
56	11 mm (R)	10 mm (R)	14 mm (R)	22 mm (I)	19 mm (S)	19 mm (I)	30 mm (S)	18 mm (R)	17 mm (S)	18 mm (S)	19 mm (S)
57	13 mm (R)	10 mm (R)	0 mm (R)	27 mm (S)	20 mm (S)	22 mm (S)	30 mm (S)	0 mm (R)	20 mm (S)	19 mm (S)	17 mm (S)
58	24 mm (S)	20 mm (S)	10 mm (R)	29 mm (S)	23 mm (S)	20 mm (I)	28 mm (S)	31 mm (S)	13 mm (I)	19 mm (S)	20 mm (S)
59	25 mm (S)	21 mm (S)	13 mm (R)	29 mm (S)	20 mm (S)	22 mm (S)	30 mm (S)	15 mm (R)	14 mm (I)	20 mm (S)	20 mm (S)
60	23 mm (S)	15 mm (I)	15 mm (R)	19 mm (R)	22 mm (S)	20 mm (I)	13 mm (R)	0 mm (R)	0 mm (R)	0 mm (R)	19 mm (S)

Supplementary Table S4- Results of the Presence of resistance genes in *P. mirabilis*

Isolates NO.	Resistance genes					Isolates NO.	Resistance genes				
	<i>TEM</i>	SHV	AmpC	FOX	KPC		<i>TEM</i>	SHV	AmpC	FOX	KPC
1	+	+	-	+	-	31	+	-	-	-	-
2	+	-	-	+	-	32	+	-	-	-	-
3	+	-	-	+	-	33	+	-	-	-	-
4	+	-	-	-	-	34	+	-	-	-	-
5	+	-	-	-	-	35	+	-	-	-	-
6	+	-	-	-	-	36	+	-	-	-	-
7	+	-	-	-	-	37	+	-	-	-	-
8	+	-	-	-	-	38	+	-	-	-	-
9	+	-	-	-	-	39	+	-	-	-	-
10	+	-	-	-	-	40	+	-	-	-	-
11	+	-	-	-	-	41	+	-	-	-	-
12	+	-	-	-	-	42	+	-	-	-	-
13	+	+	+	-	+	43	+	-	+	-	-
14	+	+	+	-	+	44	+	-	-	-	-
15	+	+	+	+	+	45	+	-	-	-	-
16	+	-	-	-	-	46	+	+	-	-	-
17	+	-	-	-	-	47	+	+	-	-	-
18	+	-	-	-	-	48	+	+	-	-	-
19	+	-	-	-	-	49	+	-	-	-	-
20	+	+	-	-	-	50	+	-	-	-	-
21	+	+	-	-	-	51	+	-	-	-	-
22	+	-	-	-	-	52	+	-	-	-	-
23	+	-	-	-	-	53	+	-	-	-	-
24	+	-	-	-	-	54	+	-	-	-	-
25	+	-	-	-	-	55	+	-	-	-	-
26	+	-	-	-	-	56	+	+	-	-	-
27	+	-	-	-	-	57	+	+	-	-	-
28	+	-	-	-	-	58	+	+	-	-	-
29	+	-	-	-	-	59	+	-	-	-	-
30	+	-	-	-	-	60	+	+	-	-	-

Description ▼	Scientific Name ▼	Max Score ▼	Total Score ▼	Query Cover ▼	E value ▼	Per. Ident ▼	Acc. Len ▼	Accession
Proteus mirabilis strain 1091 beta-lactamase OXA-58 (blaOXA-58) and AmpC (ampC) genes, complete cds	Proteus mirabilis	1581	1645	100%	0.0	100.00%	3093	KX668205.1

Description ▼	Scientific Name ▼	Max Score ▼	Total Score ▼	Query Cover ▼	E value ▼	Per. Ident ▼	Acc. Len ▼	Accession
Proteus mirabilis strain P2 16S ribosomal RNA gene, partial sequence	Proteus mirabilis	274	274	100%	3e-72	100.00%	804	MT276311.1

Description ▼	Scientific Name ▼	Max Score ▼	Total Score ▼	Query Cover ▼	E value ▼	Per. Ident ▼	Acc. Len ▼	Accession
Proteus mirabilis strain PM9 plasmid pPM9-KPC_24k, complete sequence	Proteus mirabilis	137	137	100%	1e-31	100.00%	24225	CP137082.1

Description ▼	Scientific Name ▼	Max Score ▼	Total Score ▼	Query Cover ▼	E value ▼	Per. Ident ▼	Acc. Len ▼	Accession
Proteus mirabilis strain 2022CK-00288 plasmid unnamed1, complete sequence	Proteus mirabilis	664	664	100%	0.0	100.00%	23582	CP132328.1
Proteus mirabilis resistance plasmid R1010 beta-lactamase SHV-11 (blaSHV-11) gene, complete cds	Proteus mirabilis	658	658	99%	0.0	100.00%	861	FJ483937.1

Description ▼	Scientific Name ▼	Max Score ▼	Total Score ▼	Query Cover ▼	E value ▼	Per. Ident ▼	Acc. Len ▼	Accession
Proteus mirabilis plasmid pCMY-4, partial blaTEM gene for beta-lactamase TEM-1	Proteus mirabilis	442	442	100%	1e-122	100.00%	858	Y18200.1
Proteus mirabilis extended spectrum beta-lactamase (blaTEM-155) gene, complete cds	Proteus mirabilis	442	442	100%	1e-122	100.00%	1118	DQ679961.1

Supplementary Figure S2. BLAST Analysis Results of Beta-Lactamase Genes *blaAmpC*, *blaFOX*, *blaKPC*, *blaSHV*, and *blaTEM* in *Proteus mirabilis*

Supplementary Table S5. Detailed Contingency Table for Rare Resistance Genes (N=60)

Resistance Genotype	Phenotype Tested	Resistant among Gene-positive [n/N(%)]	Resistant among Gene-negative [n/N(%)]	P-value (Fisher's Exact)
<i>blaKPC</i>	Imipenem	2/3 (66.7%)	11/57 (19.3%)	0.091
<i>blaAmpC</i>	Cefoxitin	3/4 (75.0%)	3/56 (5.3%)	0.001
<i>blaFOX</i>	Cefoxitin	3/4 (75.0%)	3/56 (5.3%)	0.001

Note : Fisher's Exact Test was utilized for these comparisons due to small expected cell counts (sparse data). P-values <0.05 are considered statistically significant