

rCitrusBBC: a bacterial resource to mine for new agricultural probiotics for citrus

Bibliographic search ^a				
Bacterial species	N° of isolates in rCitrusBBC collection ^b	PGPR activity	PGPR activities ^c	PGPR traits ^d
<i>Bacillus wiedmannii</i>	22	Yes	1 2 (salt, drought and heavy metals) 3 (fungal diseases) 4	1 2 (indole-3-acetic-acid (IAA)) 3 4
<i>Agrobacterium tumefaciens</i>	11	Yes	1 (under As stress) 2 (salt and arsenic) 4	1 2 (IAA) 3 5
<i>Pseudomonas putida</i>	10	Yes	1 2 (flooding, salt and drought) 3 (various soil-borne pathogens)	1 2 (IAA) 5
<i>Pseudomonas jessenii</i>	9	Yes	1 2 (flooding, salt, cold, heavy metals and drought) 3 (phytopathogens) 4	1 2 (IAA) 4 5
<i>Arthrobacter globiformis</i>	6	Yes	1 2 (iron, salt) 4	2 (IAA) 3 4 5
<i>Microbacterium trichothecenolyticum</i>	6	Yes	1 2 (Hg)	2 (IAA) 5
<i>Pseudomonas oryzae</i>	6	Yes	1 2 (salt) 4	1 2 (IAA, Indole-3-Lactic Acid and Indole-3-Carboxylic Acid) 3 4 5
<i>Paracoccus litorisediminis</i>	5	No		
<i>Stenotrophomonas maltophilia</i>	5	Yes	1 2 (salt) 3 (fungal pathogen) 4	1 2 (IAA and gibberellic acid) 3 4 5
<i>Pseudomonas taiwanensis</i>	4	Yes	1 3 4	2 (IAA) 4 5
<i>Pseudoxanthomonas japonensis</i>	4	Yes	1 3 (nematode)	
<i>Pseudomonas helmanticensis</i>	4	Yes	1 2 (salt, drought, heavy metals) 4	1 2 (IAA) 4 5
<i>Pseudomonas silesiensis</i>	3	Yes	1 2 (cold) 3 (fungal and bacterial pathogens) 4	1 2 (IAA) 4 5
<i>Rhodococcus koreensis</i>	3	No		
<i>Rhodococcus wratislaviensis</i>	3	No		
<i>Pseudomonas baetica</i>	2	Yes	1 2 (salt, drought) 4	1 2 (IAA) 4 5
<i>Pseudomonas entomophila</i>	2	Yes	1 2 (drought) 3 (antifungal activity) 4	1 2 (IAA and gibberellic acid) 3 4 5
<i>Pseudomonas frederiksbergensis</i>	2	Yes	1 2 (salt, heavy metals) 4	2 (IAA) 4 5 6
<i>Pseudomonas lini</i>	2	Yes	1 2 (drought) 3 (antifungal) 4	1 2 (IAA) 3 4 5
<i>Nocardia globerula</i>	2	Yes	3 (antifungal)	
<i>Bacillus mobilis</i>	2	No		
<i>Microbacterium yannicii</i>	2	No		

<i>Erwinia billingiae</i>	2	Yes	3 (antifungal)	
<i>Microbacterium profundum</i>	2	No		
<i>Pseudomonas plecoglossicida</i>	2	Yes	1 2 (salt and aluminium) 3 (antifungal) 4	1 2 (IAA) 4 5
<i>Pseudomonas brassicacearum</i>	1	Yes	1 2 (salt) 3 4	1 2 (IAA) 3 5
<i>Pseudomonas monteilii</i>	1	Yes	1 2 (drought) 4	2 (IAA, gibberellic acid and cytokines) 4 5
<i>Pseudomonas japonica</i>	1	Yes	1 2 (salt)	5
<i>Flavobacterium frigidimaris</i>	1	No		
<i>Kribbella swartbergensis</i>	1	No		
<i>Rhizobium herbae</i>	1	No		
<i>Rhizobium giardinii</i>	1	Yes	4	3
<i>Bacillus cereus</i>	1	Yes	1 2 (salt, metals) 4	1 2 (IAA) 3 4 5
<i>Bacillus mojavensis</i>	1	Yes	1 3 (nematode)	
<i>Bacillus paramycooides</i>	1	Yes	1 2 (salt, drought, metals) 4	1 2 (IAA) 4 5
<i>Bacillus toyonensis</i>	1	Yes	1 2 (salt, metals) 3 (antifungal)	2 (IAA, cytokinin and, non-indole phenylacetic acid) 4
<i>Microbacterium paraoxydans</i>	1	Yes	1 2 (metals) 3 (antifungal)	1 2 (IAA) 5
<i>Pedobacter steynii</i>	1	No		
<i>Pedobacter westerhofensis</i>	1	No		
<i>Janthinobacterium lividum</i>	1	Yes	2 (cold) 3 (antifungal)	
<i>Terribacillus goriensis</i>	1	No		
<i>Arthrobacter cupressi</i>	1	No		
<i>Arthrobacter humicola</i>	1	Yes	1 2 (cold) 3 (antifungal) 4	2 (IAA, indole-3-butyric acid, gibberellin, zeatin and abscisic acid) 3 4
<i>Arthrobacter luteolus</i>	1	Yes	1 2 (salt)	
<i>Arthrobacter pascens</i>	1	Yes	1 2 (salt) 3 4	4 5
<i>Pantoea rodasii</i>	1	Yes	1 2 (salt) 4	2 (IAA) 4 5
<i>Bacillus litoralis</i>	1	Yes	1	2 (IAA) 5
<i>Erwinia endophytica</i>	1	Yes	2 (salt)	
<i>Erwinia tasmaniensis</i>	1	Yes	4	2 (IAA) 3 4
<i>Agromyces fucosus</i>	1	No		
<i>Nocardia salmonicida</i>	1	No		

^a For the bibliographic search of plant growth promotion (PGP) activity, the terms (*bacterial species name + PGP**) and (*bacterial species name + plant*) were used for Web Of Science database indexing.

^b The r*Citrus*BBC #ID of each isolate is indicated in Penyalver *et al.* 2022 <https://doi.org/10.1016/j.nbt.2022.06.002>

^c PGPR activities are indicated by numbers: 1, PGP; 2, tolerance to abiotic stress; 3, tolerance to biotic stress and 4, plant nutrition.

^d PGPR traits are also indicated by numbers: 1, acc deaminase; 2, production of phytohormones, 3, nitrogen fixation; 4, phosphate solubilization; 5, siderophore production and 6, potassium solubilization.