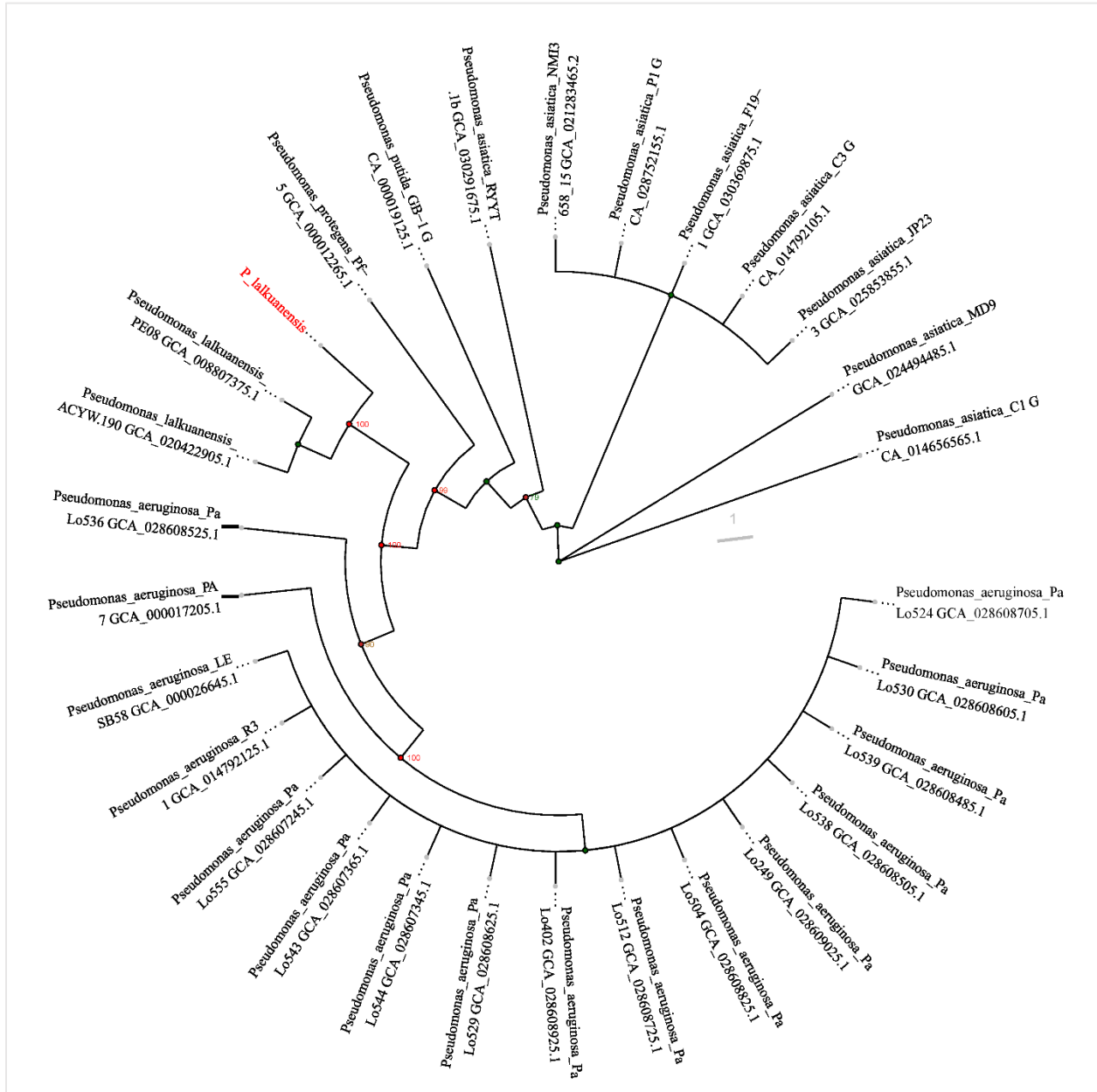
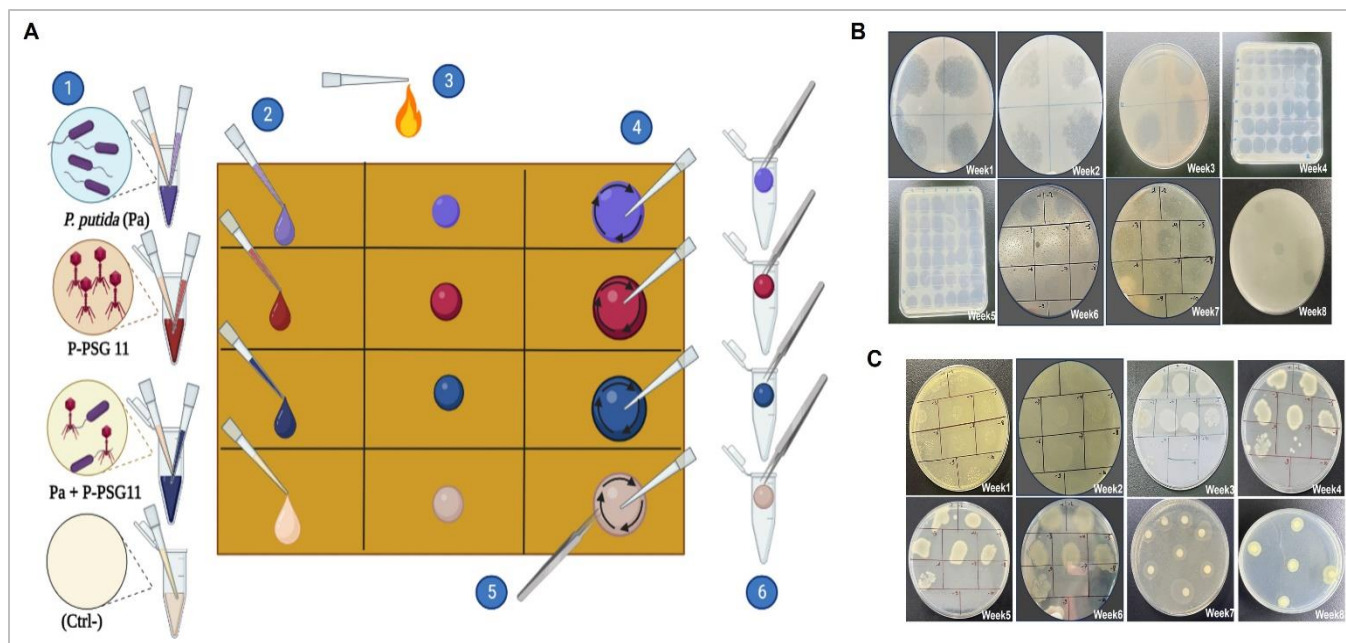


1 **Figure S1.** Phylogenetic tree of *Pseudomonas lalkuanensis*

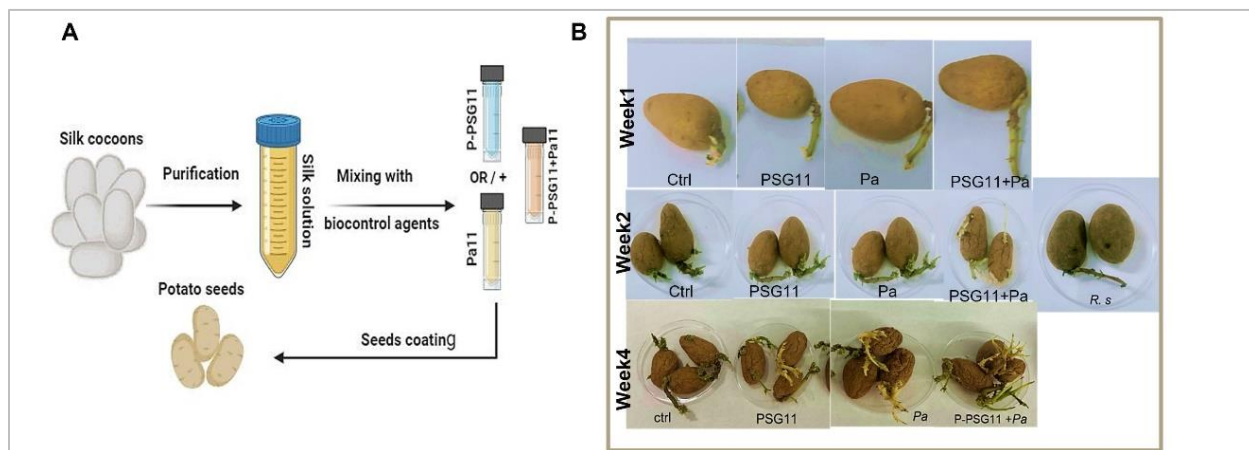


2

3 **Figure S2** Stability evaluation of *P. lalkuanensis* A101 and P-PSG11 in silk-trehalose films
 4 preservation by P-PSG11 phage titer and A101 colony counting for 8 weeks.



5
6 **Figure. S3** Germination of potato seeds under seed coating conditions using Silk-
7 trehalose and mixed with the biocontrol agents P-
8 PSG11 phage and *P. lalkuanensis* bacteria at room temperature conditions.



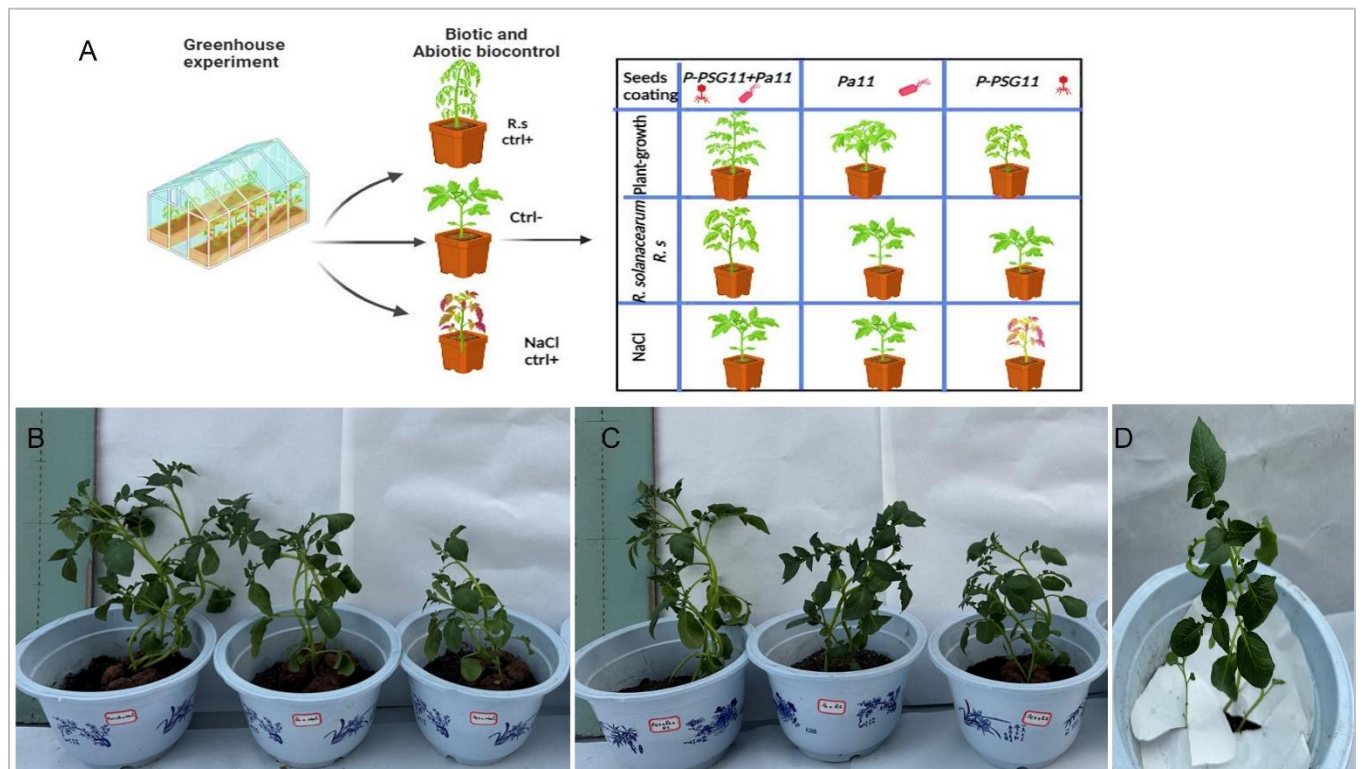
9
10 **Table S1.** Some characteristics of the experimental soil and cattle manure (CM)

Characteristics	Soil
<u>Particle size distribution (%):</u>	
Textural grade	Sand
pH	8.05 [†]
EC _e (dS m ⁻¹)	1.14
<u>Soluble cations (meq l⁻¹)</u>	

Na ⁺	3.9
K ⁺	1.56
Ca ²⁺	21.1
Mg ²⁺	9.2
<u>Soluble anions (meq l⁻¹)</u>	
Cl ⁻	0.14
HCO ₃ ⁻	2.18
SO ₄ ²⁻	0.41
CO ₃ ²⁻	0.00
Organic C (g kg ⁻¹)	0.37
Total N (g kg ⁻¹)	0.20
Available N (mg kg ⁻¹)	1.28
Available P (mg Kg ⁻¹)	3.1

11 † In soil-water suspension (1:2.5)

12 **Figure. S4** Evaluating for biocontrol and plant development by using A) The pot experiment
 13 design, B) single phage (P-PSG11), *P. lalkuanensis* and phage + PGPR (PSG11+ *P. lalkuanensis*)
 14 against *Ralstonia solanacearum*, C) single phage (P-PSG11), *P. lalkuanensis* and phage + PGPR
 15 (PSG11+ *P. lalkuanensis*) preventing salinity stress (NaCl), comparing with D) the negative
 16 controls in a pot experiment.



17