Supporting Information for Publication

Soybean ureases, but not that of *Bradyrhizobium japonicum*, are involved in the process of soybean root nodulation

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Legends to Supplementary Materials:

Table S1: Leghemoglobin content of nodules versus time post inoculation. Wild-type (W82) and mutant (*eu1/eu4*) soybean plants were inoculated with wild-type *B. japonicum* (Bj110), with a mutant strain which produces an apourease (Δ*ureG*) or with a mutant strain which does not produce urease (Δ*ureABC*). LegHb content was measured by absorbance at 410 nm in extracts of nodules collected from 16 up to 42 days after inoculation. Each point is the average of three to six replicates.

Figure S1: Ureolytic activity of wild-type and mutant *B. japonicum*. Bacterial cells were collected by centrifugation and suspended in urease indicator solution. The change from yellow to pink color indicates alkalization of the medium resulting from ureolytic activity.

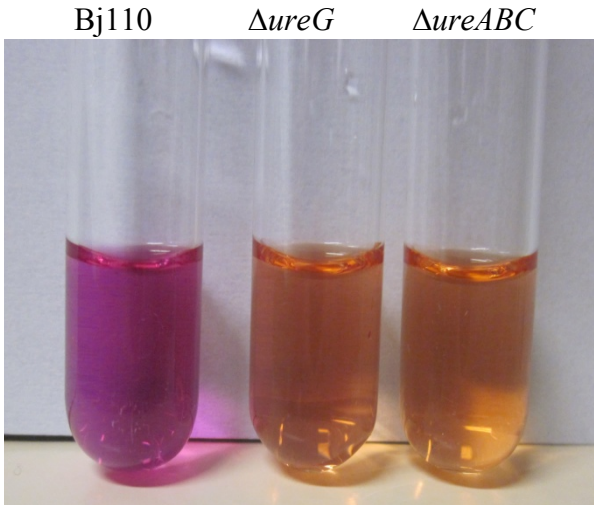
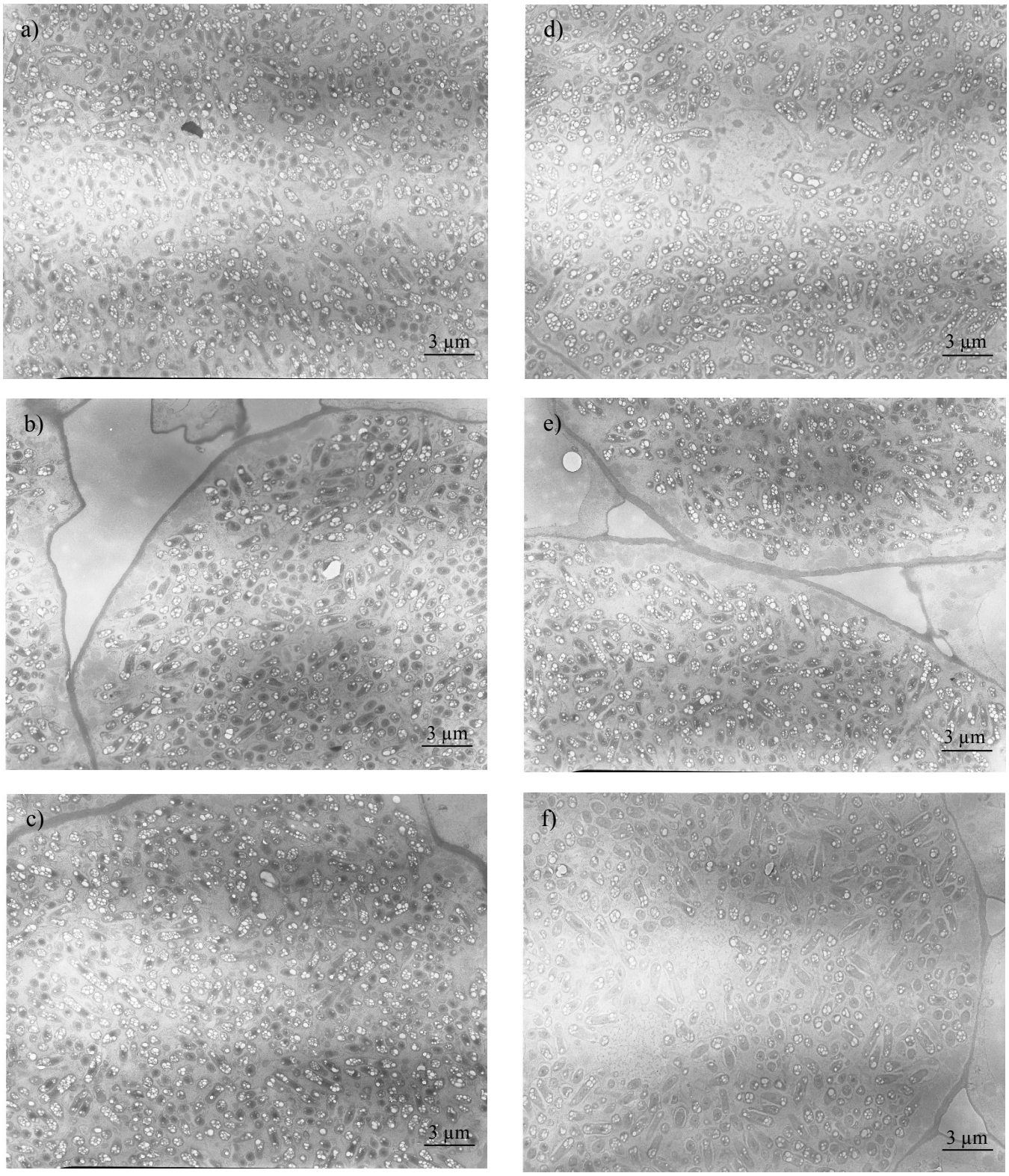
Figure S2. Transmission electron micrographs of nitrogen-fixing nodules from soybean plants 35 days after inoculation with *B. japonicum* strains. a) Nodules formed by *B. japonicum* USDA110 on wild-type Williams 82 soybean plants; b) Nodules formed by *B. japonicum ΔUreG* on wild-type Williams 82 soybean plants; c) Nodules formed by *B. japonicum ΔUreABC* on wild-type Williams 82 soybean plants; d) Nodules formed by *B. japonicum* USDA110 on urease-deficient *eu1-sun/eu4* soybean plants; e) Nodules formed by *B. japonicum ΔUreG* on urease-deficient *eu1-sun/eu4* soybean plants; f) Nodules formed by *B. japonicum ΔUreABC* on urease-deficient *eu1-sun/eu4* soybean plants.

Table S1:

	W82						eu1/eu4					
	Bj110		Bj*ΔUreG*		Bj*ΔUreABC*		Bj110		Bj*ΔUreG*		Bj*ΔUreABC*	
DAI[a]	Average[b]	SD[c]	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
16	0,0337	0,0002	0,0365	0,0056	0,0327	0,0026	0,0522	0,0069	0,0674	0,0294	0,0649	0,0075
21	0,1017	0,0273	0,0778	0,0041	0,0942	0,0217	0,0789	0,0133	0,0728	0,0224	0,0667	0,0064
28	0,0849	0,0050	0,0889	0,0049	0,0890	0,0064	0,0717	0,0088	0,0721	0,0064	0,0734	0,0031
35	0,1000	0,0308	0,0754	0,0104	0,0930	0,0110	0,0961	0,0182	0,0901	0,0053	0,1018	0,0101
42	0,0995	0,0015	ND	ND	ND	ND	0,0865	0,0059	0,0898	0,0025	0,0816	0,0131

[a] Days after inoculation; [b] Average of three to six replicates; [c] Standard deviation.

Supplementary Figure S1



Supplementary figure S2: