

**Table S1. PHB content of NGR234 and test mutants.**

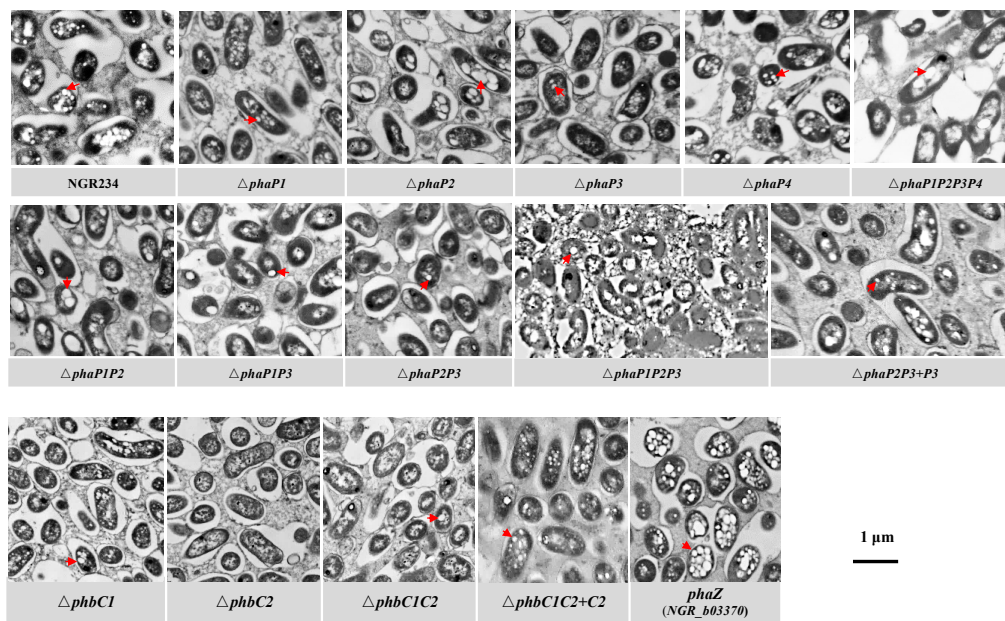
Stationary phase			Bacteroids		
Treatment	(µg ml <sup>-1</sup> OD600 <sup>-1</sup> )		Treatment	(µg g <sup>-1</sup> fresh weight)	
<i>phaZ</i> (NGR_b03370)	0.773 ± 0.020	a	WT	47.6 ± 4.4	a
Δ <i>phbC1</i>	0.762 ± 0.011	a b	Δ <i>phaP1</i>	47.3 ± 4.5	a
WT	0.758 ± 0.020	a b	<i>phaZ</i> (NGR_b03370)	47.0 ± 6.7	a
Δ <i>phaP3</i>	0.746 ± 0.063	a b	Δ <i>phbC1</i>	47.4 ± 10.9	a b
Δ <i>phbC1C2+C2</i>	0.721 ± 0.050	a b c	Δ <i>phbC1C2+C2</i>	45.0 ± 7.5	a b
Δ <i>phaP4</i>	0.709 ± 0.060	a b c	Δ <i>phaP2</i>	43.4 ± 9.5	a b c
Δ <i>phaP3P4</i>	0.695 ± 0.063	a b c d	Δ <i>phaP2P3+P3</i>	39.9 ± 2.0	a b c d
Δ <i>phaP1</i>	0.615 ± 0.094	b c d e	Δ <i>phaP1P4</i>	33.1 ± 5.9	b c d e
Δ <i>phaP1P4</i>	0.538 ± 0.034	c d e f	Δ <i>phaP4</i>	31.3 ± 5.0	c d e f
Δ <i>phaP1P3</i>	0.529 ± 0.022	c d e f	Δ <i>phaP1P2</i>	30.0 ± 2.4	c d e f
Δ <i>phaP2</i>	0.516 ± 0.093	d e f g	Δ <i>phaP1P3</i>	27.6 ± 5.0	d e f
Δ <i>phaP2P3</i>	0.464 ± 0.036	e f g h	Δ <i>phaP3</i>	23.8 ± 5.3	e f g
Δ <i>phaP2P3+P3</i>	0.375 ± 0.030	e f g h i	Δ <i>phaP2P4</i>	22.1 ± 3.8	e f g
Δ <i>phaP2P4</i>	0.310 ± 0.024	f g h i j	Δ <i>phaP3P4</i>	14.1 ± 1.1	f g h
Δ <i>phaP1P2</i>	0.060 ± 0.004	g h i j	Δ <i>phaP2P3</i>	9.8 ± 1.3	g h
Δ <i>phaP1P2P3P4</i>	0.056 ± 0.002	h i j	Δ <i>phaP1P2P3</i>	9.4 ± 1.0	g h
Δ <i>phaP1P2P3</i>	0.045 ± 0.006	i j	Δ <i>phbC1C2</i>	8.0 ± 0.3	h
Δ <i>phbC1C2</i>	0.028 ± 0.002	j	Δ <i>phaP1P2P3P4</i>	7.5 ± 1.4	h
Δ <i>phbC2</i>	0.026 ± 0.002	j	Δ <i>phbC2</i>	7.5 ± 0.5	h

Brown-Forsythe Test (P value < 0.05) rejects the assumption of equal variances. Different letters indicate significant difference between means (average ± SD is shown; n=9 from three independent experiments) based on multiple comparisons (q value < 0.05, Two-stage linear step-up procedure of Benjamini, Krieger and Yekutieli) after Kruskal-Wallis test.

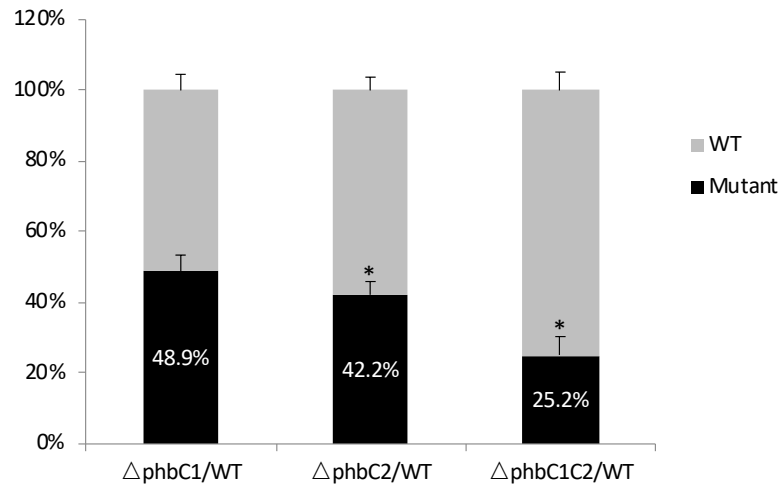
**Table S2. Symbiotic phenotypes of NGR234 and test mutants on *Vigna unguiculata*.**

Treatment	Chlorophyll content (SPAD value)		Shoot dry weight (g/plant)		Number of plants	Number of independent experiments
Control	22.2 ± 1.2	(*)	0.21 ± 0.01	(*)	45	5
WT	43.3 ± 1.0		0.34 ± 0.01		47	5
$\Delta phaP1$	39.7 ± 0.9	(ns)	0.32 ± 0.02	(ns)	19	2
$\Delta phaP2$	43.1 ± 1.6	(ns)	0.33 ± 0.03	(ns)	19	2
$\Delta phaP3$	40.3 ± 0.9	(ns)	0.30 ± 0.02	(ns)	20	2
$\Delta phaP4$	39.7 ± 1.6	(ns)	0.38 ± 0.02	(ns)	20	2
$\Delta phaP1P2$	40.5 ± 1.4	(ns)	0.26 ± 0.02	(ns)	20	2
$\Delta phaP1P3$	44.7 ± 1.7	(ns)	0.31 ± 0.02	(ns)	20	2
$\Delta phaP2P3$	42.9 ± 1.6	(ns)	0.26 ± 0.02	(ns)	20	2
$\Delta phaP2P3+P3$	41.3 ± 1.2	(ns)	0.28 ± 0.02	(ns)	30	3
$\Delta phaP1P2P3$	40.0 ± 1.6	(ns)	0.30 ± 0.02	(ns)	20	2
$\Delta phaP1P2P3P4$	44.8 ± 1.4	(ns)	0.33 ± 0.01	(ns)	29	3
$\Delta phbC1$	40.7 ± 1.1	(ns)	0.37 ± 0.03	(ns)	19	2
$\Delta phbC2$	40.0 ± 1.0	(ns)	0.36 ± 0.02	(ns)	28	3
$\Delta phbC1C2$	40.7 ± 1.1	(ns)	0.24 ± 0.01	(*)	29	3
$\Delta phbC1C2+C2$	40.6 ± 1.4	(ns)	0.29 ± 0.005	(ns)	30	3
<i>phaZ</i> (NGR_b03370)	41.3 ± 1.0	(ns)	0.32 ± 0.01	(ns)	20	2

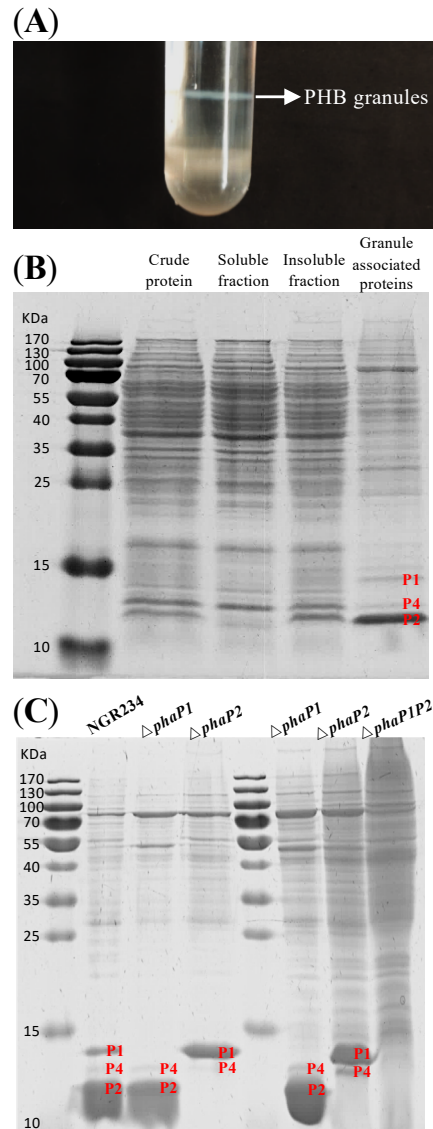
\* and ns, significant and non-significant difference between means of each treatment and wild-type strain (average ± SEM). Duncan's test for chlorophyll content and Kruskal-Wallis test followed by Mann-Whitney test (Bonferroni correction) for shoot dry weight.



**Figure S1 Pictures of ultrathin sections of nodules obtained under transmission electronic microscopy. Red arrows indicate PHB granules.**



**Figure S2 Nodule occupancy by NGR234 and mutants on *Vigna unguiculata*.** Values represent means  $\pm$  standard error of the mean based on 286~367 nodules per treatment from three independent experiments. \*, significant difference between means of wild-type (WT) and indicated mutant (t-test,  $P < 0.05$ ).



**Figure S3. Isolation of PHB associated proteins from NGR234 and strains lacking *phaP1* and/or *phaP2*.** (A) The PHB granule layer (located between 1.66 M and 1.33 M sucrose solution). (B) SDS-PAGE of proteins from soluble and insoluble fractions, and those associated with PHB granules from wild-type NGR234. (C) SDS-PAGE of PHB associated proteins from NGR234,  $\Delta phaP1$ ,  $\Delta phaP2$  and  $\Delta phaP1P2$ . Granule-associated protein samples from these strains were used in subsequent nanospray ESI-MS analysis. Three identified phasins are indicated in red.