

Supplemental Figure 1

A

OsPHR1	:	KQRMRWTP	ELHESFVHAVNKLGGSEKATPKGV	LKIMKVDGLTIYHVKSHLQKYR	:	269
OsPHR2	:	KTRMRWTP	ELHERFVDAVNLLGGSEKATPKGV	LKIMKADNLTIIYHVKSHLQKYR	:	299
AtPHR1	:	KARMRWTP	ELHDAFVEAVNSLGGSEKATPKGV	LKIMKVEGLTIYHVKSHLQKYR	:	278
At2g20400	:	KGRMRWTP	ELHEVFVDAVNQLGGSEKATPKGV	LKIMKVEGLTIFHVKSHLQKYR	:	284
At3g04450	:	KQRMRWTP	ELHDAFVEAINQLGGSEKATPKAV	LKLINSPGLTVYHVKSHLQKYR	:	291
At5g29000	:	KQRMRWTP	ELHDAFVEAVNQLGGSEKATPKAV	LKLNNPGLTIYHVKSHLQKYR	:	234
At3g13040	:	KSRMRWTP	ELHESFVKAVIKLEGPEKATPKAV	KKLMNVEGLTIYHVKSHLQKYR	:	294
At5g06800	:	KTRIRWTP	QDLHEKFEVCEVNRLLGGADKATPK	RAILKRMDSGLTIFHVKSHLQKYR	:	245
CrPSR1	:	KSRLRWTP	ELHNRVFNVAVNSLGGPDKATPKG	ILKLMGV DGLTIYHIKSHLQKYR	:	240
At2g01060	:	KQRLRWTP	ELHERFVDAVAQLGGPDKATPKGV	LRVMGVQGLTIYHVKSHLQKYR	:	68
At3g24120	:	KPRLRWTP	ELHERFVDAVTQLGGPDKATPKT	IMRTMGVKGGLTYHLKSHLQKFR	:	94
At4g13640	:	KPRLRWTP	ELHERFVDAVTQLGGPDKATPKT	IMRTMGVKGGLTYHLKSHLQKFR	:	90
At3g12730	:	KPRLRWTP	ELHERFVDAVTHLGGPEKATPKT	IMRVMGVKGGLTYHLKSHLQKFR	:	76
At1g79430	:	KPRLRWTP	ELHERFVDAVAQLGGPDKATPKT	IMRVMGVKGGLTYHLKSHLQKFR	:	87
At3g04030	:	KPRLKWT	PD LHERFIEAVNQLGGADKATPKT	IMKVMGIPGLTYHLKSHLQKYR	:	98
At5g18240	:	KPRLKWT	PD LHERFVEAVNQLGGGDKATPKT	IMKVMGIPGLTYHLKSHLQKYR	:	98
At1g69580	:	KPRLKWT	CDLHKKFIEAVNQLGGPDKATPKG	LMKVMEIPGLTYHLKSHLQKYR	:	83
At5g45580	:	KPRLRWTP	ADLHDFVDAVAKLGGADKATPKS	VLRKLMGLKGLTYHLKSHLQKYR	:	76

B

OsPHR1	:	EALRLQMEV	QKRLHEQLEIQKQLRLRIEEQ	GKYLQKMF EK	:	342
OsPHR2	:	EALRLQLEI	QKRLHEQLEIQRSLQLRIEEQ	GKCLQMMLEQ	:	375
AtPHR1	:	EALRLQMEV	QKRLHEQLEIQRNQLRIEEQ	GKYLQMMFEK	:	354
At2g20400	:	ETLRLQMEH	QKRLHEQLESRLTMQLRIEEQ	GKALLMMIEK	:	359
At3g04450	:	EALRLQMKV	QKRLHEQLEIQRSLQLQIEEQ	GRYLQMMIEK	:	365
At5g29000	:	QALRLQMEV	QKRLHEQLEIQRSLQLQIEEQ	GRYLQMMFEK	:	319
At3g13040	:	EALRMQMEV	QKRLHEQLEVQRVQLRIEEH	AKYLEKMLEE	:	374
At5g06800	:	EALQLQLD	VQRHLHEQLEIQRNQLRIEEQ	GKQLKMMMEQ	:	319
CrPSR1	:	EALRFQMEI	QKRLHEQLEIQRQLQLSLEAH	GRYIASLMEQ	:	426
At2g01060	:	EALKLQMEV	QKRLHEQLEVQRQLQLRIEA	QGKYLKKIIEE	:	144
At3g24120	:	EALRAQMEV	QRRRLHEQLEVQRRLQLRIEA	QGKYLQSTIEK	:	181
At4g13640	:	EALRAQMEV	QRRRLHEQLEVQRRLQLRIEA	QGKYLQSTIEK	:	177
At5g45580	:	EAMRHQVDA	QRFQHEQLEVQKKLQMRMEA	QGKYLTLTLEK	:	197
At1g79430	:	NMNEQMEV	QRRRLHEQLEVQRHLQLRIEA	QGKYMQSTILER	:	165
At3g04030	:	EALQMQIEV	QRRRLHEQLEVQRHLQLRIEA	QGKYLQSVLEK	:	186
At5g18240	:	DALQMQIEV	QRRRLHEQLEVQRHLQLRIEA	QGKYLQSTIEK	:	188
At1g69580	:	EALQMMEV	QKRLHEQIEVQRHLQVKIEA	QGKYLQSVLMK	:	175
At3g12730	:	NMNEQMEV	QRRRIEEVVIERQVNRIRIA	QGKYMESMLEK	:	152

Figure S1. Alignment of the MYB (A) and predicted coiled-coil (B) conserved domains constructed by use of the CLUSTAL X 1.81 program (Thompson et al., 1997) and colored by use of the GeneDoc 3.2 program with default BLOSUM score.

Supplemental Figure 2

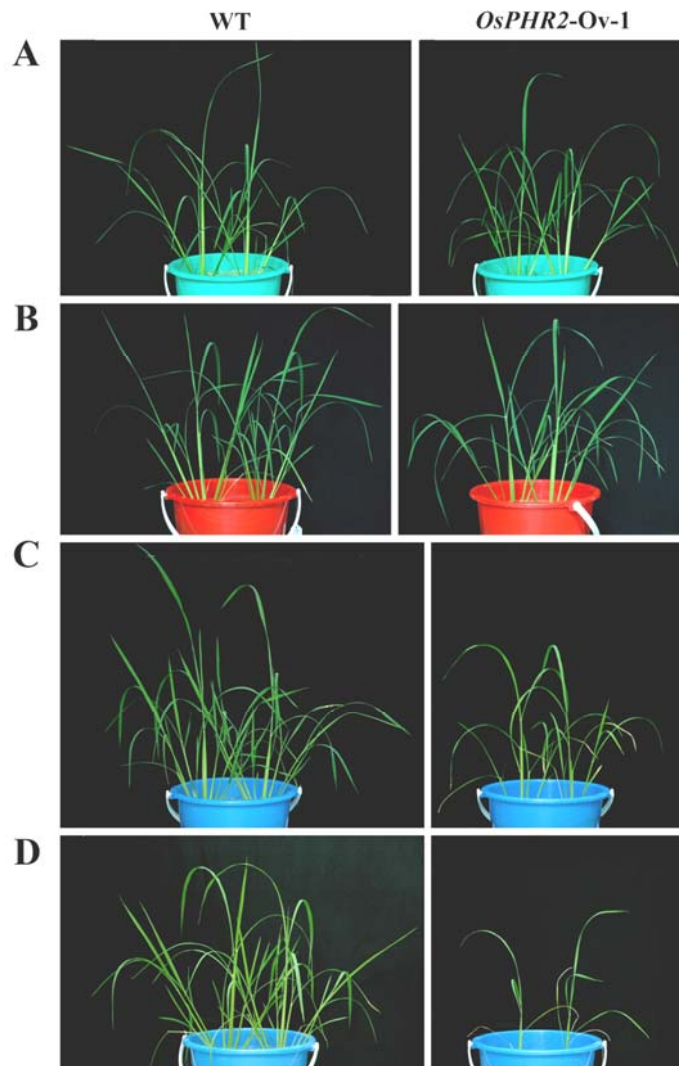


Figure S2. Growth performance of 45-d-old wild type (WT) and one line of *OsPHR2*-overexpressing plants (*OsPHR2-Ov-1*) in a pot experiment using acidic red soil supplied with 3 Pi levels: A, 30 mg Pi/Kg soil; B, 60 mg/Kg soil; C, 120 mg Pi/Kg soil; D, 200 mg Pi/Kg soil.

Supplemental Figure 3

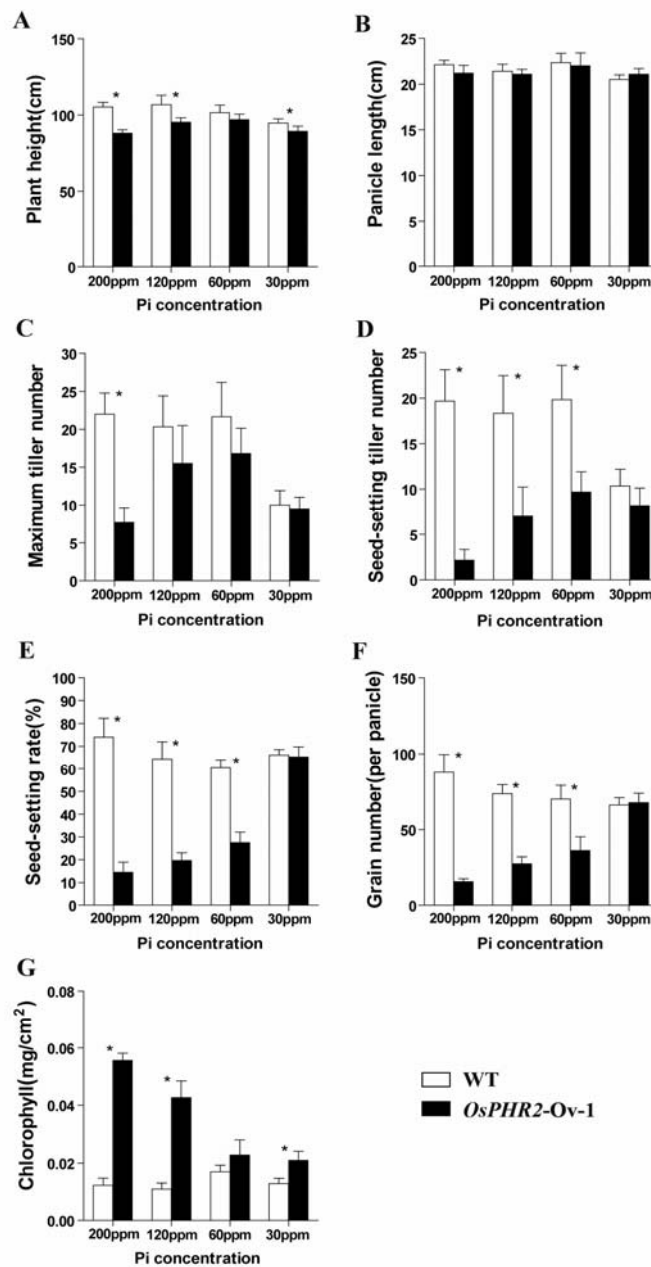


Figure S3 Growth parameters measured from wild type (white column) and *OsPHR2-Ov-1* (black column) plants in the soil pot experiment with four Pi levels. A, Plant height; B, Panicle length; C, Maximum tiller number; D, Seed-setting tiller number; E, Seed-setting rate; F, Grain number; G, Chlorophyll. Values are mean \pm SD (n=6). Stars on the bars represent means that are statically different between WT and *OsPHR2-Ov-1* in the same treatment (p<0.01).

Supplemental Figure 4

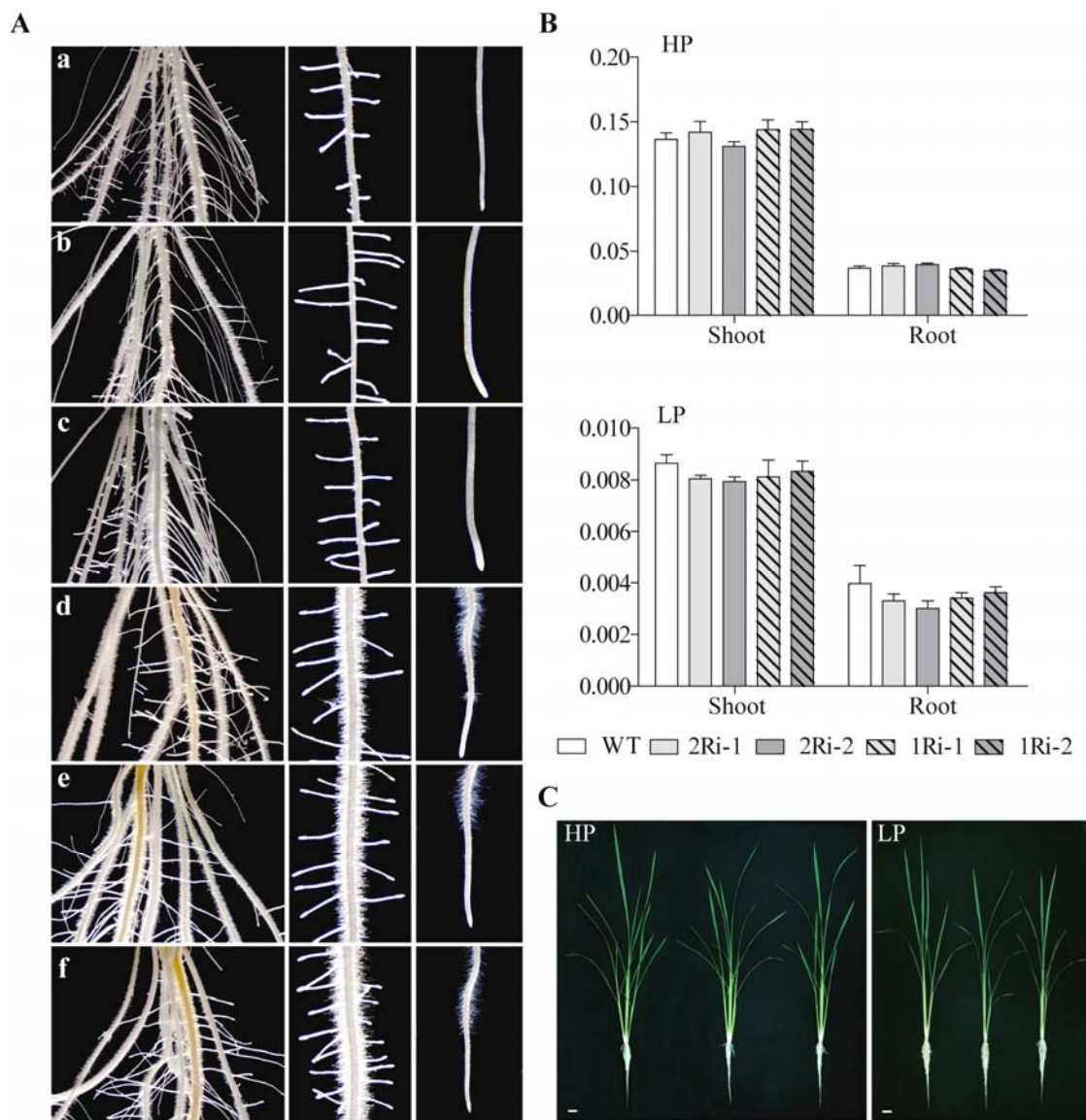


Figure 4. **A**, Root hair proliferation of *OsPHR1*-RNAi and *OsPHR2*-RNAi lines in the regions of root base (left panels), elongation zone (middle panels) and primary root tip (right panels) grown under Pi-supplied (b,2Ri-1 and c, 1Ri-1) and Pi-deficient (e,2Ri-1 and f, 1Ri-1) conditions compared with WT (a and d). **B** UP, Pi concentration in the shoots and roots of wild type, 2Ri-1 and 1Ri-1; Down, Pi concentration in the shoots and roots of wild type, 2Ri-1 and 1Ri-1. Error bars indicate the SD (n=5). **C** Left, 2Ri-1 and 1Ri-1 after grow under high Pi conditions (10mg/L Pi, 0.5L/plant) for 30 days; Right, 2Ri-1 and 1Ri-1 after grow under low Pi conditions (1mg/L Pi, 0.5L/plant) for 30 days. Bar=1 cm.

Supplemental Table 1

Table S1. Primers of phosphate-starvation-inducible (*PSI*) genes used for RT-PCR analysis

Gene	Primer sequence (5'-3')
<i>OsPHR1</i>	F: CACAAGAAGGGAAAACCTACCGATG R: TCAAGATTCATGCACTCTACGACGC
<i>OsPHR2</i>	F: CGCTTTGTAGATGCTGTCAATC R: AGACCCTCATCACATCCTCATTATC
<i>OsIPS1</i>	F: AAGGGCAGGGCACACTCCACATTATC R: ATTAGAGCAAGGACCGAAACACAAAC
<i>OsIPS2</i>	F: CCT TCTTCTGGATTCTCTC R: AGTTCACCACAAAAGATACAGTAG
<i>SQD2</i>	F: CTGAAAACGGTAATGGATAGG R: AACACCACCAGCACGAGC
<i>OsPAP10</i>	F: ATACTGGCAGCCGACGGATGA R: GAGGGAGCTGGAGCGGAGAA
<i>OsActin</i>	F: GGA ACTGGTATGGTCAAGGC R: AGTCTCATGGATACCCGCAG

Supplemental Table 2

Table S2. Primers of Pi transporter genes used for qRT-PCR analysis.

Gene	Code	Primer sequence (5'-3')	UPL
<i>OsPT1</i>	AF536961	F: AGCGTTCGGGTCCTGTA R: CGTTCTTGATGCCGATCC	#116
<i>OsPT5</i>	AF536965	F: GGCAGAACGAAATGGAG R: GACGGTCTGCCTGTAGGAGT	#160
<i>OsPT7</i>	AF536967	F: GCTTCCTCCTCACCTTCCTT R: TTCTCCCGTGACATCTCCTC	#117
<i>OsPT9</i>	AF536969	F: GCCTGGCGGATCATACTC R: CACCAGCGCCGTATACCT	#65
<i>OsPT10</i>	AF536971	F: GGC GGATCATTCTCATGG R: TCCACCAAAGCCGTATATCTG	#65
<i>OsPT11</i>	AF5369672	F: ATATCCAAGGCCTCGTTCCT R: CCGATCAGCTGGATCATGT	#91
<i>OsPT12</i>	AF536972	F: AAATCGAGGTGGAGGAGGAG R: CGAGAAGAGGCCGTAGTCC	#1
<i>OsPHO2</i>	OS05G48390	F: TTTTACACAAGCCACCAAAGC R: TCACGAGCATGTCCAACAA	#149
<i>OsActin</i>	OS03G0718100	F: CAACACCCCTGCTATGTACG R: CATCACCAGAGTCCAACACAA	#158

Supplemental Table 3

Table S3. Primers of *OsmiRNA399* and *OsPHO2* used for qRT-PCR analysis.

Gene	Primer sequence (5'-3')
<i>Os-miR399a</i>	F: GCTGGAAATGATGCTGGTAGC R: CTCCTTTGGCACGAGATCTGT
<i>Os-miR399d</i>	F: GGTGGCCTTTGATAGACCATCA R: GCAGGCCGTTTTGGTGAAT
<i>Os-miR399f</i>	F: GGCAGAGGTGATCAGATTGCA R: GGCAAATCTCCTTTGGCAGAG
<i>Os-miR399j</i>	F: GGAGCATGTGAAGTCTTTTGTAGC R: GGCAACTCTCCTTTGGCAGA