Supporting Information for

Foliar application of silica nanoparticles alleviates arsenic accumulation in rice grain: Co-localization of silicon and arsenic in node

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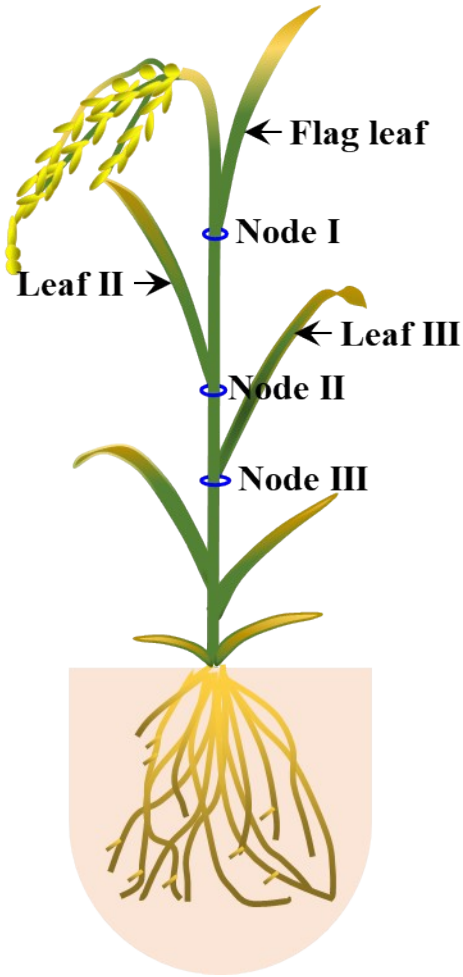

Figure S1. The locations of nodes I/II/III and flag/second/third leaves in the rice plant.

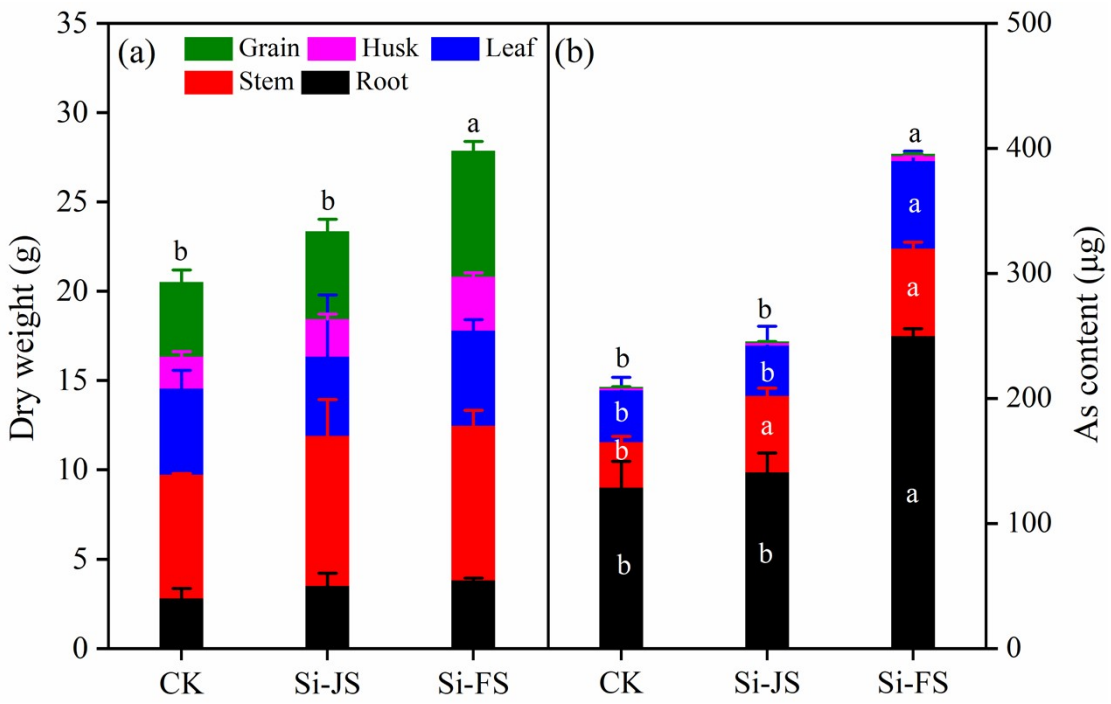

Figure S2. Dry weight (a) and As content (b) in various tissues of rice plants at the milky ripe stage. CK, control without application of silica NPs; Si-JS and Si-FS, treatments with foliar application of silica NPs at the jointing and flowering stages, respectively. Columns labeled by different letters indicate that the dry weight and As content of individual tissues and whole plants (right above the columns) are significantly different ($P < 0.05$) among the treatments. Arsenic content of husk or grain in the Si-FS treatment was significantly higher than that in the CK and Si-JS treatments.

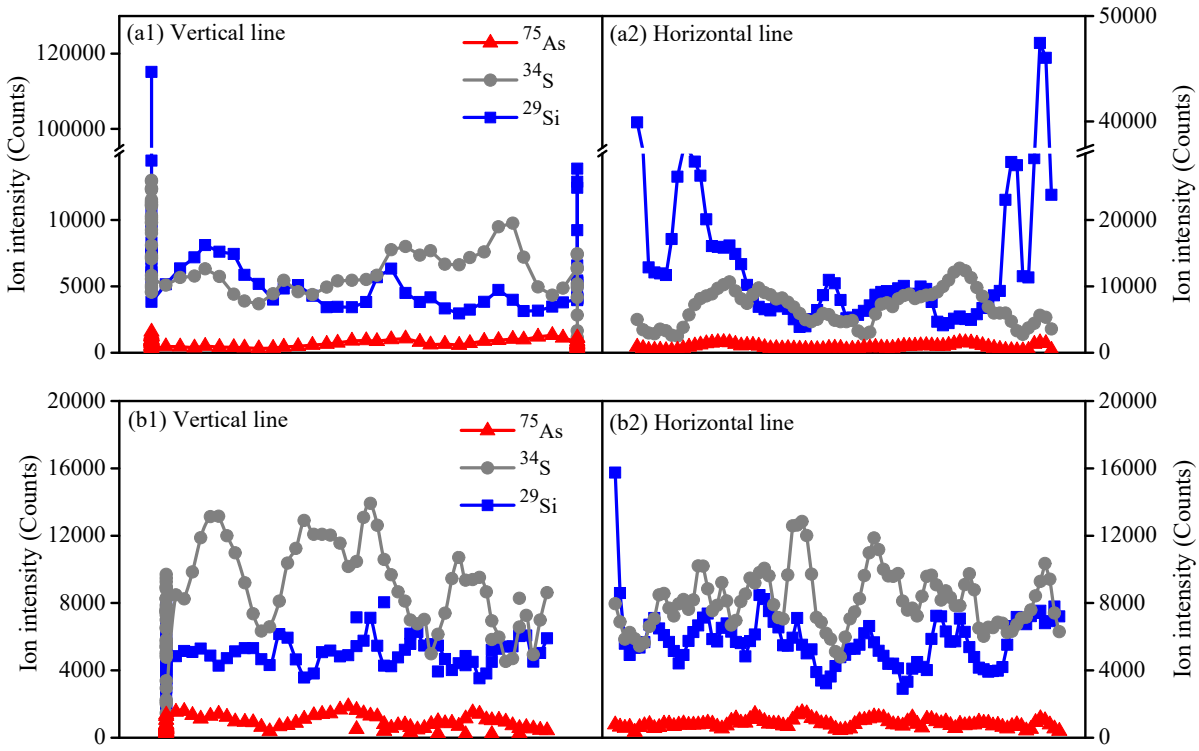

Figure S3. Ion intensity of ^{75}As, ^{34}S and ^{29}Si extracted from the cross sections of (a1-a2) node I and (b1-b2) flag leaf sheath in the LA-ICP-MS images in Figure 5.

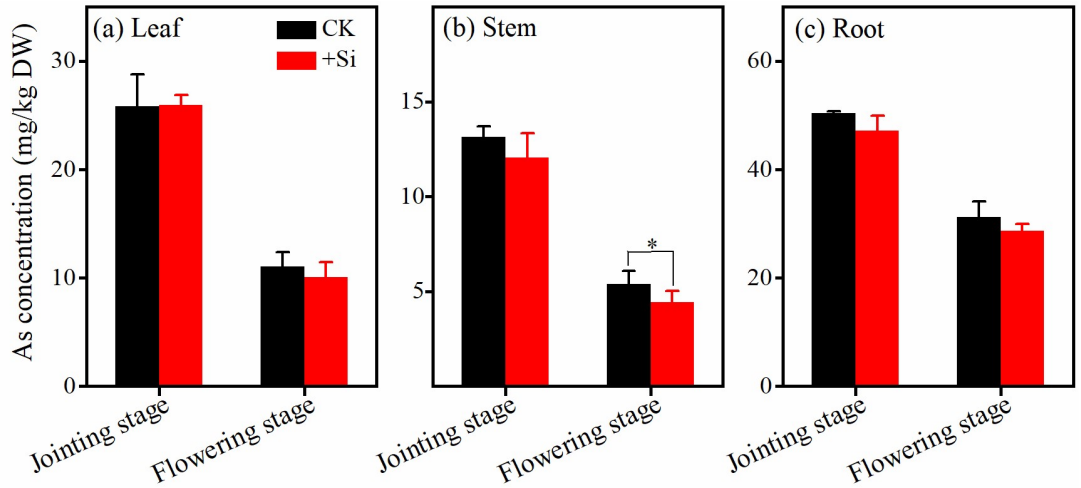

Figure S4. Arsenic concentration in various tissues of rice plants after one-week foliar application of silica NPs at the jointing and flowering stages, respectively. Column labeled by * indicate that the As concentration is significantly different ($P < 0.05$) in comparison to the CK treatment.

Table S1. The characteristics of silica NPs used in this study.

Particle size (nm)	Surface area (m^2/g)	pH	Color	Form	Loss on drying
12	200	4.10	White	Powder	0.6%

Table S2. Specific primer sequences for the genes quantified in the experiment [1, 2, 3, 4].

Genes	Forward primers	Reverse primers
OsLsi1	5`-CGGTGGATGTGATCGGAACCA-3`	5`-CGTCGAACTTGTTGCTCGCCA-3`
OsLsi2	5`-ATCTGGGACTTCATGGCC C-3`	5`-ACGTTTGATGCGAGGTTGG-3`
OsLsi3	5`-CTGTATCCCTGTTGCCAGCTG-3`	5`-TAATCCGGCATGCGTACTTG-3`
OsLsi6	5`-GAGTTCGACAACGTCTAATCGC-3`	5`-AGTACACGGTACATGTATACACG-
OsABCC1	5`-AACAGTGGCTTATGTTCCTCAAG-	5`-AACTCCTCTTTCTCCAATCTCTG-3`
Actin	5`-GACTCTGGTGATGGTGTCAGC-3`	5`-GGCTGGAAGAGGACCTCAGG-3`

References

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