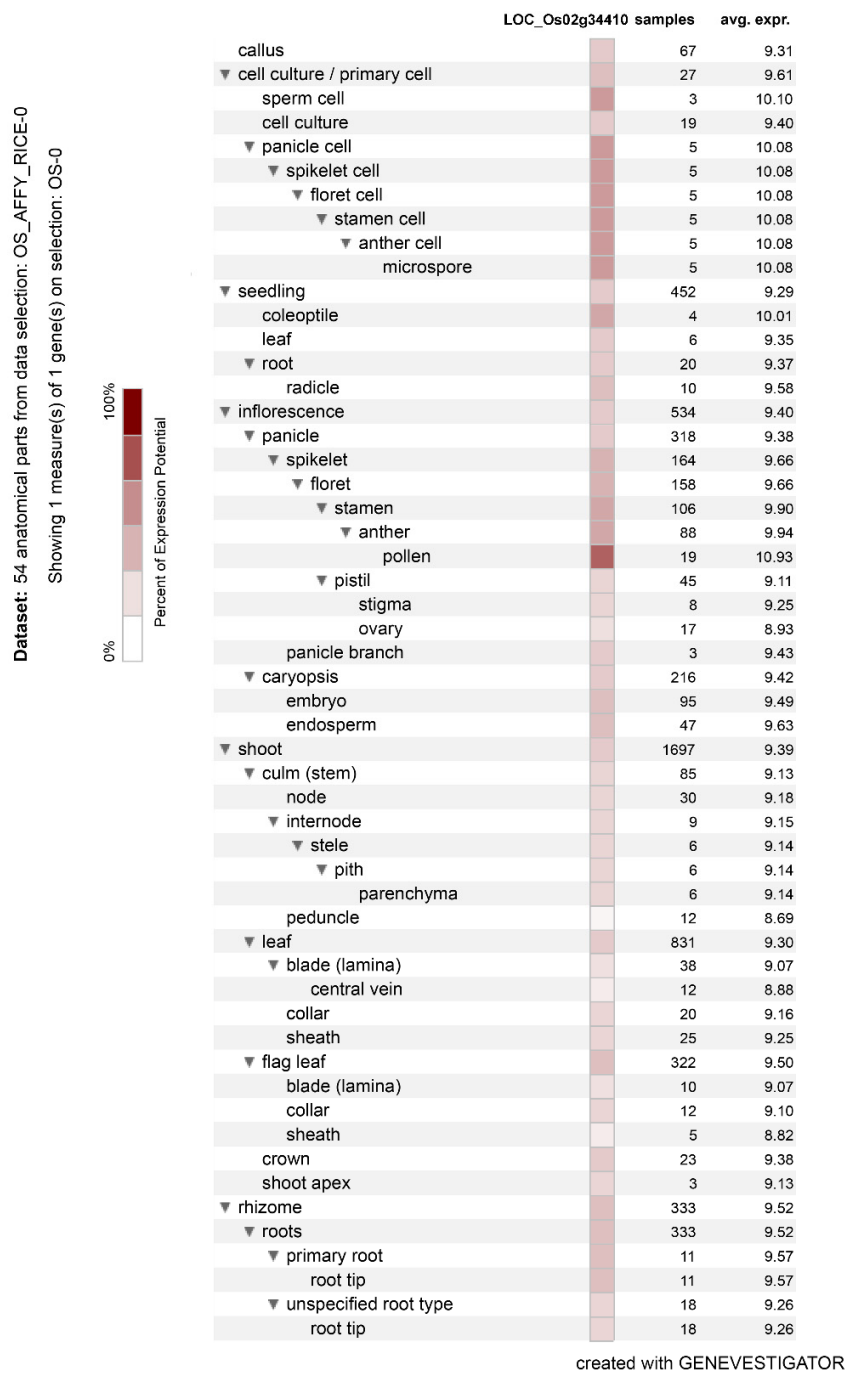
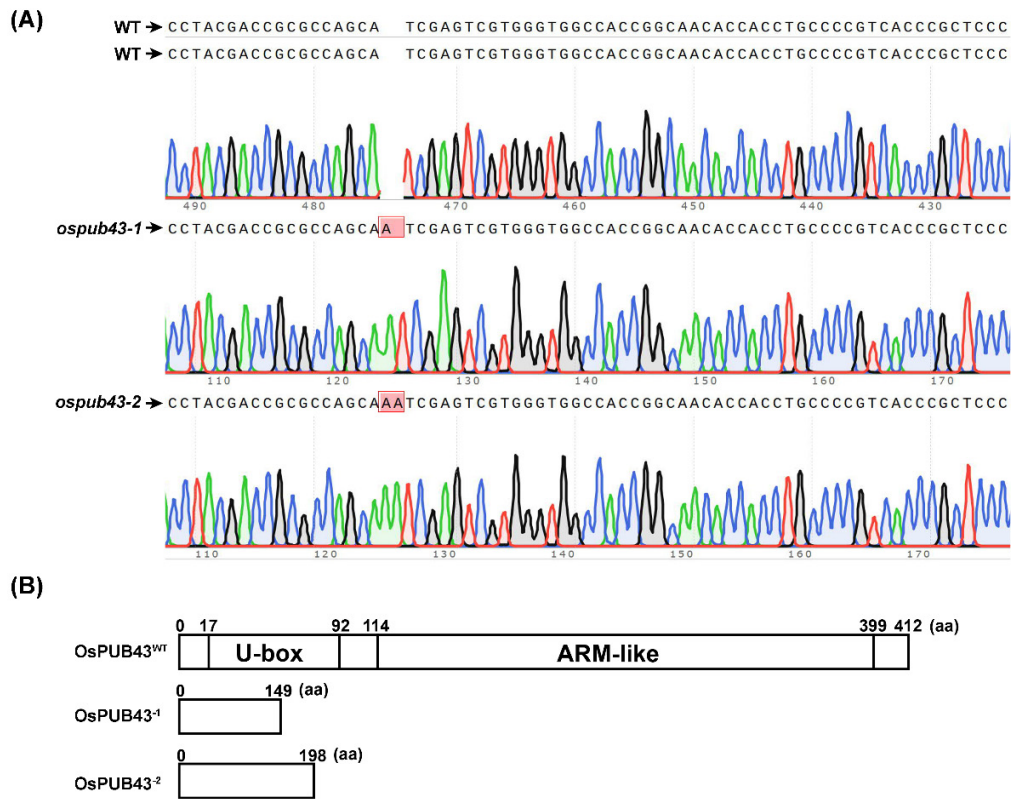


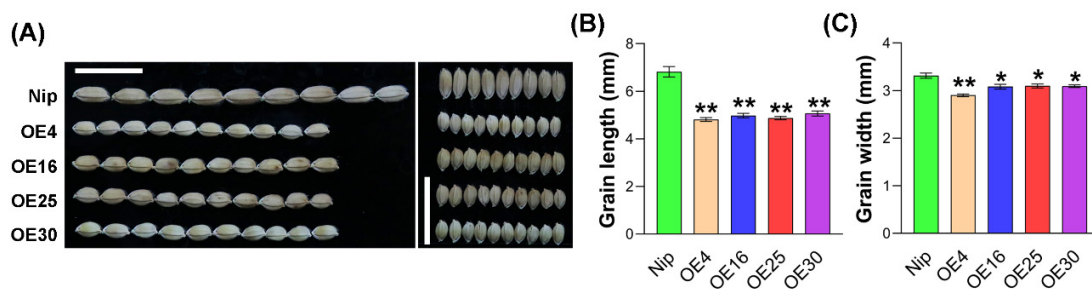
**Figure S1** Spatio-temporal expression profile of *OsPUB43*. The expression profile of *OsPUB43* is analyzed by using the PlaNet Browser.



**Figure S2** Spatio expression profile of *OsPUB43*. The expression profile of *OsPUB43* is analyzed by using the Genevestigator.



**Figure S3** Generation of *ospub43* mutant alleles by CRISPR/Cas9 system. (A) DNA sequence chromatograms obtained from CRISPR/Cas9-derived T1 progeny, together with a wild-type control. (B) Predicted protein structures of *ospub43* alleles. OsPUB43<sup>-1</sup> and OsPUB43<sup>-2</sup> are composed of 149 and 198 amino acids, respectively

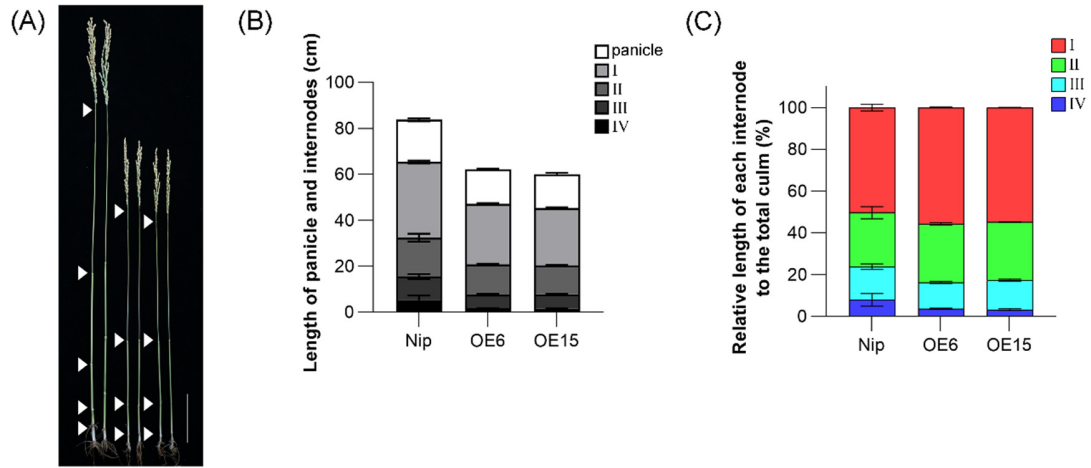


**Figure S4** OsPUB43 is a negative modulator of grain length and width in rice.

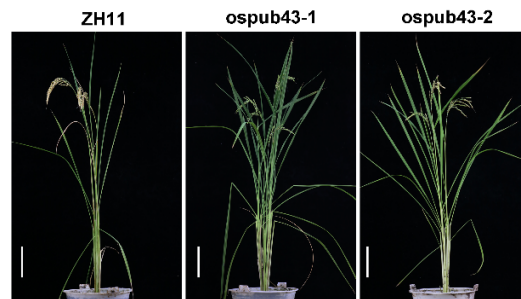
(A) Mature grains of wild type (Nip) and *OsPUB43*-OE lines.

(B, C) Comparisons of grain length and width of wild type with that of *OsPUB43*-OE lines.

Student's *t*-test is used to generate the *P*-values in (B, C). Bars with different letters are significantly different at \*\**P* < 0.01 or \**P* < 0.05.



**Figure S5** Rice *OsPUB43*-OE lines display shorter basal internodes than wild type (Nip).  
 (A) Nip and *OsPUB43*-OE lines phenotypes of culm (4 months old). Scale bars, 10 cm.  
 (B) Internode length of Nip and *OsPUB43*-OE lines culm. Values are means  $\pm$ SE (n= 10 plants).  
 (C) Length of the internode as a percentage of the total internode length. Numbers indicate internodes from the uppermost to the fourth.



**Figure S6** Morphological phenotypes of 4-month-old mutant lines *ospub43-1* and *ospub43-2*, and the corresponding wild type (Zhonghua11, ZH11). Bars = 15 cm.