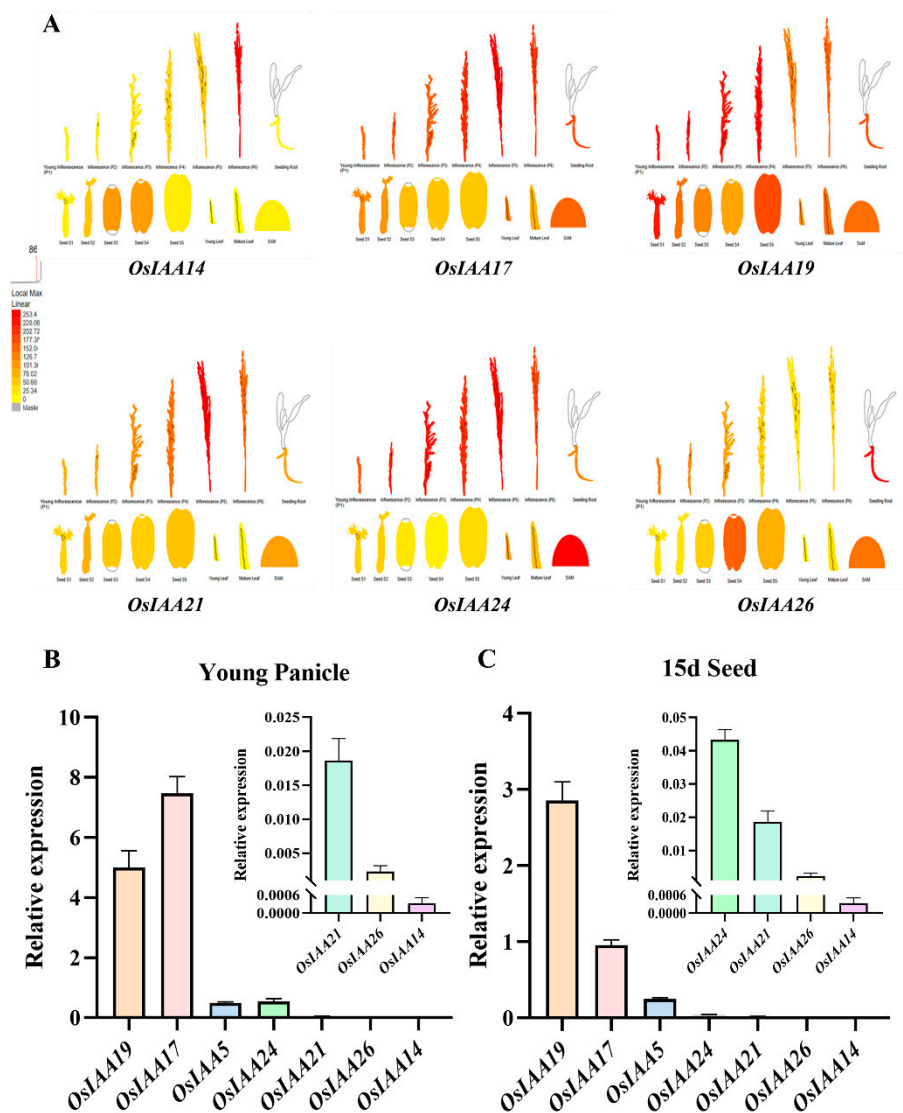


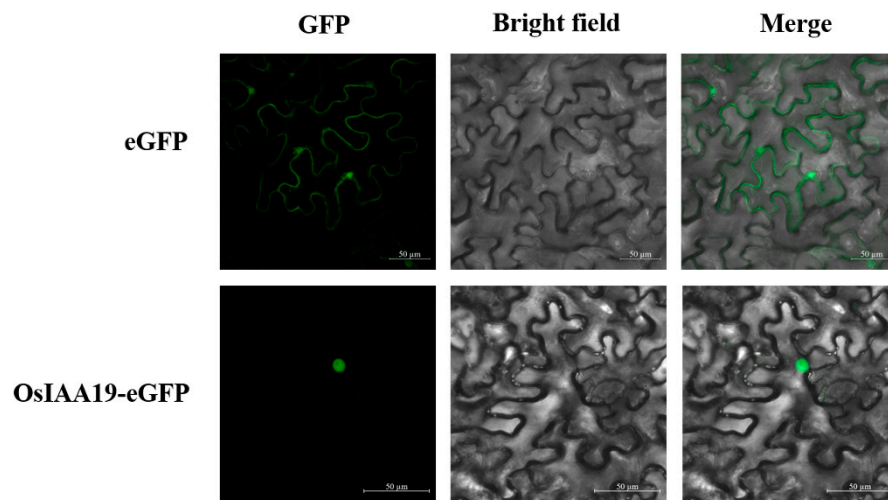
# *OsIAA19*, an *Aux/IAA* family gene, involved in the regulation of seed-specific traits in rice

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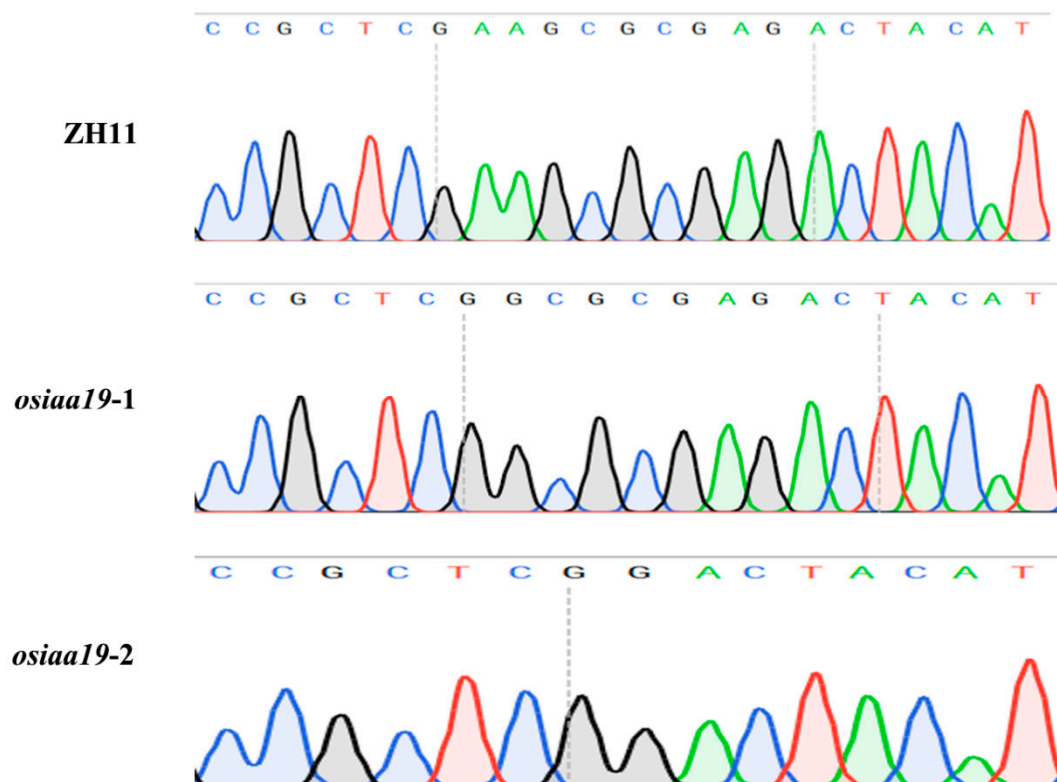
## Supplementary Materials



**Supplementary Figure S1.** Expression analysis of *OsIAA5*, *OsIAA14*, *OsIAA17*, *OsIAA19*, *OsIAA21*, *OsIAA24* and *OsIAA26* in both young panicles (B) and developing seeds 15 d after flowering (C). *Actin01* was used as an internal control for gene expression. Data are means ± SD (n=3 biological replicates).



**Supplementary Figure S2.** Subcellular localization analysis of OsIAA19-eGFP protein in tobacco epidermal cells. eGFP protein alone is also expressed in tobacco epidermal cells as a control. The scale bar is 50  $\mu\text{m}$ .



**Supplementary Figure S3.** Sequencing data of *osiaa19* mutants.



**Supplementary Figure S4.** Morphology of *osiaa19* mutant and ZH11 control spikelets at heading stage. Scale bar, 5 mm.



**Supplementary Figure S5.** Photographs of germinating seeds 96 h after imbibition (HAI).

**Supplementary Table S1.** Gene IDs of *OsIAA* family members in rice.

Gene ID	Gene name	Gene ID	Gene name	Gene ID	Gene name	Gene ID	Gene name
LOC_Os01g08320	<i>OsIAA1</i>	LOC_Os02g56120	<i>OsIAA9</i>	LOC_Os05g14180	<i>OsIAA17</i>	LOC_Os08g01780	<i>OsIAA25</i>
LOC_Os01g09450	<i>OsIAA2</i>	LOC_Os02g57250	<i>OsIAA10</i>	LOC_Os05g44810	<i>OsIAA18</i>	LOC_Os09g35870	<i>OsIAA26</i>
LOC_Os01g13030	<i>OsIAA3</i>	LOC_Os03g43400	<i>OsIAA11</i>	LOC_Os05g48590	<i>OsIAA19</i>	LOC_Os11g11410	<i>OsIAA27</i>
LOC_Os01g18360	<i>OsIAA4</i>	LOC_Os03g43410	<i>OsIAA12</i>	LOC_Os06g07040	<i>OsIAA20</i>	LOC_Os11g11420	<i>OsIAA28</i>
LOC_Os01g48450	<i>OsIAA5</i>	LOC_Os03g53150	<i>OsIAA13</i>	LOC_Os06g22870	<i>OsIAA21</i>	LOC_Os11g11430	<i>OsIAA29</i>
LOC_Os01g53880	<i>OsIAA6</i>	LOC_Os03g58350	<i>OsIAA14</i>	LOC_Os06g24850	<i>OsIAA22</i>	LOC_Os12g40890	<i>OsIAA30</i>
LOC_Os02g13520	<i>OsIAA7</i>	LOC_Os05g08570	<i>OsIAA15</i>	LOC_Os06g39590	<i>OsIAA23</i>	LOC_Os12g40900	<i>OsIAA31</i>
LOC_Os02g49160	<i>OsIAA8</i>	LOC_Os05g09480	<i>OsIAA16</i>	LOC_Os07g08460	<i>OsIAA24</i>		

**Supplementary Table S2.** Sequence of the primers used in the study

Primer Name	Primer Sequences (5'-3')	Usage
<i>OsActin</i> -qRT-F	CCAAGGCCAATCGTGAGAAGAT	RT-qPCR
<i>OsActin</i> -qRT-R	AATCAGTGAGATCACGCCAG	RT-qPCR
<i>OsIAA5</i> -qRT-F	CCTCCAAGACCAAGAGTATGTC	RT-qPCR

<i>OsIAA5</i> -qRT-R	TTCCGGCAGATAGTGGTAAC	RT-qPCR
<i>OsIAA14</i> -qRT-F	GGAGCACGTTCCAGTCTTCGT	RT-qPCR
<i>OsIAA14</i> -qRT-R	GCCGTCCTTGTCTCATAGGC	RT-qPCR
<i>OsIAA17</i> -qRT-F	GGATGAGGATGCGGAGGA	RT-qPCR
<i>OsIAA17</i> -qRT-R	GTAGCTGCGAATTGGTGGC	RT-qPCR
<i>OsIAA19</i> -qRT-F	AGGTTAGCATGGATGGAGCC	RT-qPCR
<i>OsIAA19</i> -qRT-R	TCCCAAGGAAGATCACCAACA	RT-qPCR
<i>OsIAA21</i> -qRT-F	CCTGCTTTGGCGTATGTATC	RT-qPCR
<i>OsIAA21</i> -qRT-R	ATGGCATGGAGAATTGTCTG	RT-qPCR
<i>OsIAA24</i> -qRT-F	GGCACTGGATCTCCTCTTCA	RT-qPCR
<i>OsIAA24</i> -qRT-R	TCAGACCATCACCTGGCTTC	RT-qPCR
<i>OsIAA26</i> -qRT-F	CTCGCCACCATCAGCGTCTT	RT-qPCR
<i>OsIAA26</i> -qRT-R	CCCGTCCATGCTCACCTTCA	RT-qPCR
<i>OsGS9</i> -qRT-F	GACGCAAGCAGCGACCAGCA	RT-qPCR
<i>OsGS9</i> -qRT-R	GCCTGGCAGTTGGAGGATGAGC	RT-qPCR
<i>OsGW7</i> -qRT-F	TGGAGGAAGAACAAGAAC	RT-qPCR
<i>OsGW7</i> -qRT-R	ATATGACGTGTCGAGGAC	RT-qPCR
<i>OsIAA19</i> -GFP-F	ATTTGGAGAGGACAGGGTACCATGCCGCCGCCGCTCGAA	Subcellular localization
<i>OsIAA19</i> -GFP-R	CACCATGGTACTAGTGTCTGACTTTGTTCTGACCTGTCTGTTCCAG	Subcellular localization
<i>OsIAA19</i> -F	GCACGCATGCTTACTTGGC	Sequencing
<i>OsIAA19</i> -R	CTCTCTCCTCCCCTTCTCCAA	Sequencing