



Corrigendum: The Cell Cycle Checkpoint Regulator ATR Is Required for Internal Aluminum Toxicity-Mediated Root Growth Inhibition in *Arabidopsis*

Yang Zhang^{1,2†}, Jinliang Guo^{1,2†}, Mo Chen¹, Lun Li^{1,2}, Lihua Wang³ and Chao-Feng Huang^{1,2*}

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***Correspondence:**
Chao-Feng Huang
cfhuang@sibs.ac.cn

[†]These authors have contributed
equally to this work.

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¹ College of Resources and Environmental Sciences, Nanjing Agricultural University, Nanjing, China, ² Shanghai Center for Plant Stress Biology, National Key Laboratory of Plant Molecular Genetics, CAS Center for Excellence in Molecular Plant Sciences, Chinese Academy of Sciences, Shanghai, China, ³ Flower Research Institute, Yunnan Academy of Agricultural Sciences, Kunming, China

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There were mistakes in the icon colors (right upper corner) of **Figures 1C,D,H,I, 3D,F,H, 4B**. The correct version of these figures appears below. The authors apologize for the mistakes. This error does not change the scientific conclusions of the article in any way.

The original article has been updated.

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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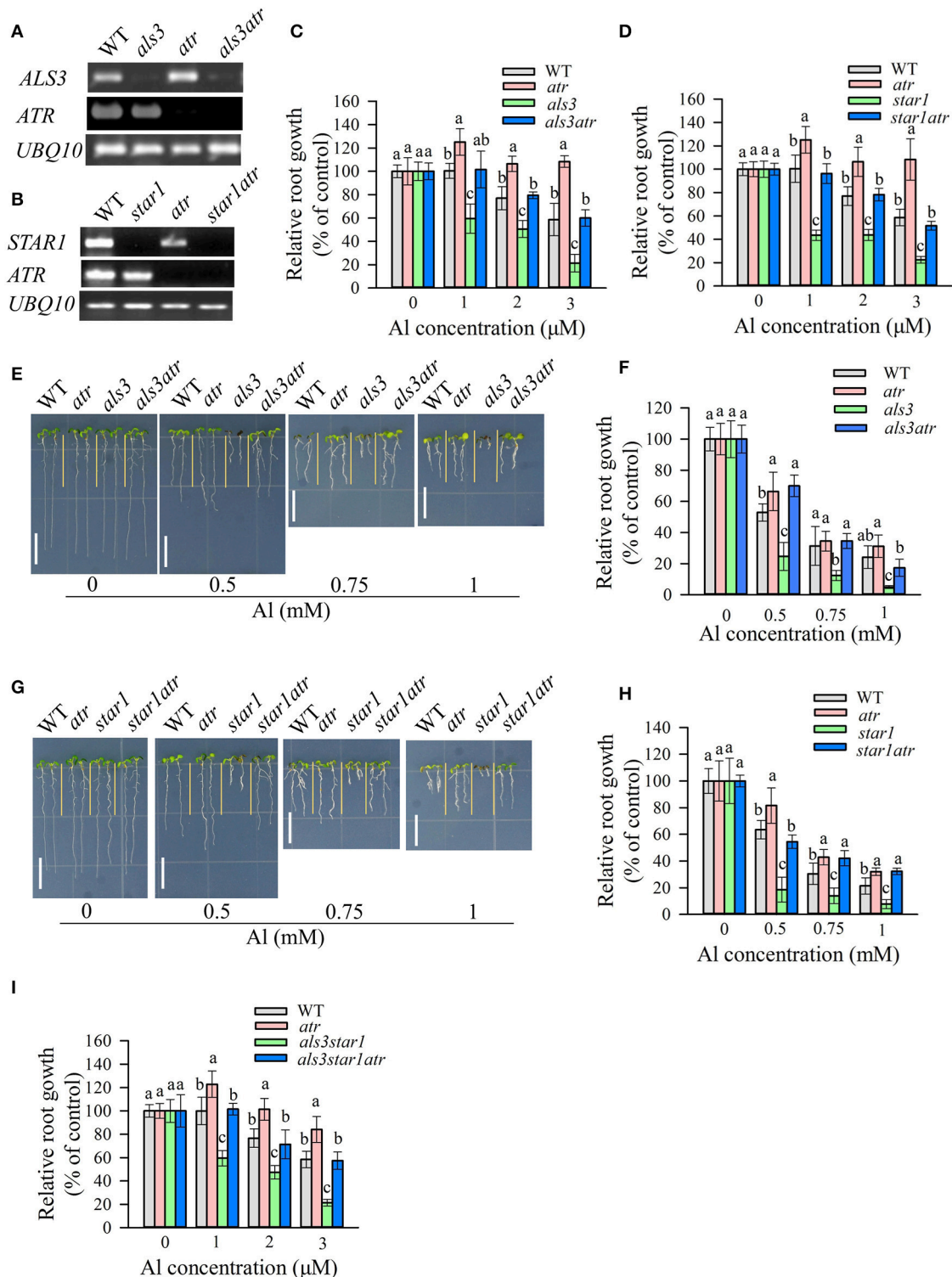


FIGURE 1 | Rescue of the Al-sensitive phenotype of *als3* and *star1* by *atr* mutation. **(A,B)** RT-PCR analysis of *ATR*, *ALS3*, or *STAR1* in WT and different single or double mutants. *UBQ10* was used as internal control. **(C,D)** Evaluation of Al tolerance in *als3* **(C)** or *star1* **(D)**-related mutants in hydroponic conditions. Seedlings were grown on a nutrient solution containing 0, 1, 2, or 3 μ M Al at pH 5.0 for 7 d and then root length was measured and compared. Data are means \pm SD ($n = 15$ –20). **(E–H)** Evaluation of Al tolerance in soaked gel conditions. Seedlings were grown on a soaked gel medium containing 0, 0.5, 0.75, or 1 mM Al for 7 d. Data are means \pm SD ($n = 10$ –15). **(E,F)** Rescue of the Al-sensitive phenotype of *als3* by *atr*. **(G,H)** Rescue of the Al-sensitive phenotype of *star1* by *atr*. **(I)** Rescue of the Al-sensitive phenotype of *als3star1* by *atr* in hydroponic conditions. Means with different letters are significantly different ($P < 0.05$, Tukey's test). Scale bar = 1 cm.

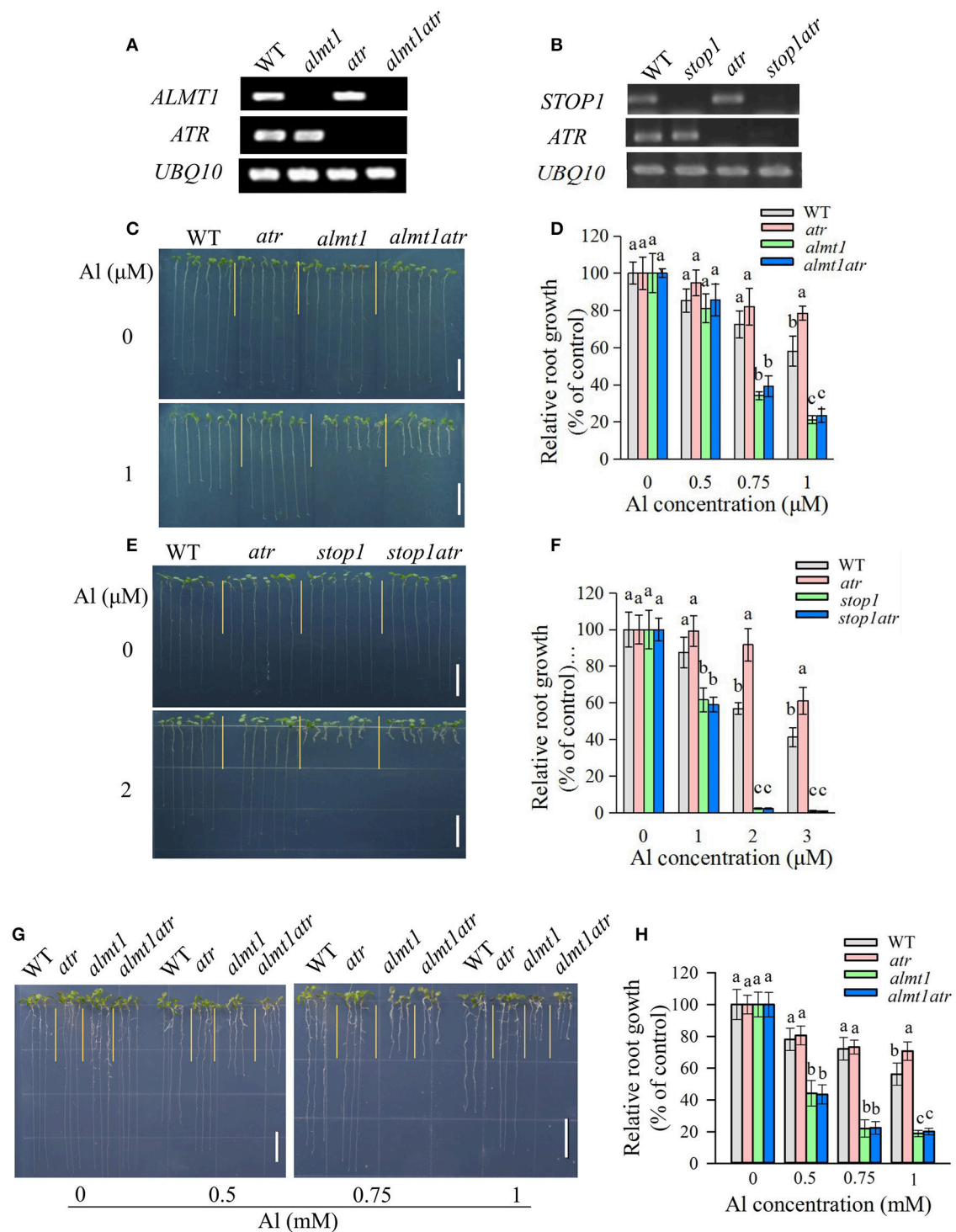


FIGURE 3 | The Al hypersensitivity defects in *almt1* and *stop1* could not be rescued by the *atr* mutation. **(A,B)** RT-PCR analysis of *ATR*, *ALMT1*, or *STOP1* in WT and different single or double mutants. *UBQ10* was used as internal control. **(C–F)** Evaluation of Al tolerance in *almt1* **(C,D)** or *stop1* **(E,F)**-related mutants in hydroponic conditions. Seedlings were grown on a nutrient solution with different concentrations of Al at pH 5.0 for 7 d and then root length was measured and compared. Data are means \pm SD ($n = 15–20$). **(G,H)** Evaluation of Al tolerance in *almt1*-related mutants in soaked gel conditions. Seedlings were grown on a soaked gel medium containing 0, 0.5, 0.75, or 1 mM Al for 7 d. Data are means \pm SD ($n = 10–15$). Means with different letters are significantly different ($P < 0.05$, Tukey's test). Scale bar = 1 cm.

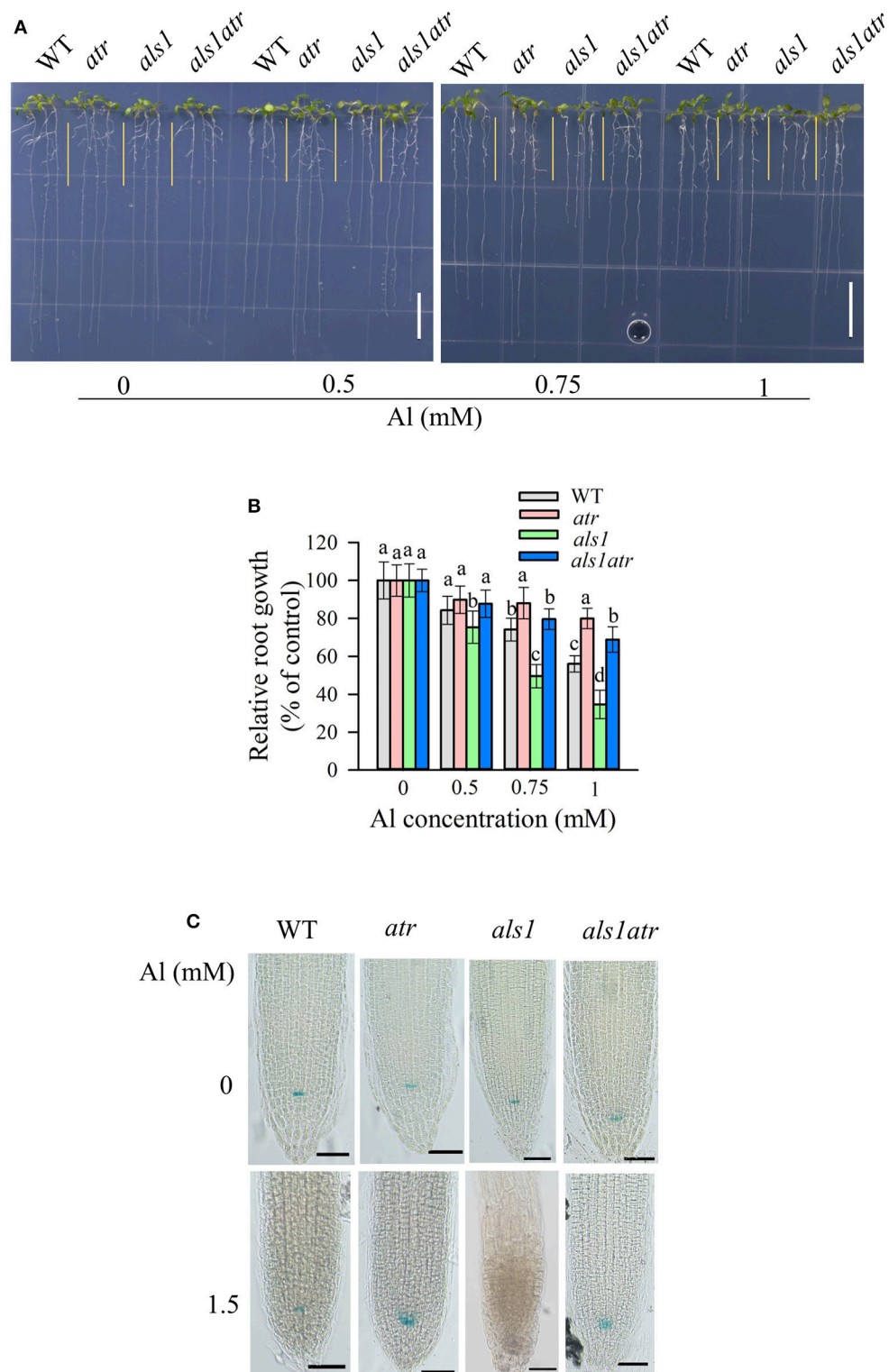


FIGURE 4 | Rescue of the Al-sensitive phenotype of *als1* by *atr* mutation. **(A,B)** Seedlings of WT, *atr*, *als1*, and *als1atr* were grown on a soaked gel medium containing 0, 0.5, 0.75, or 1 mM Al for 7 d. Data are means \pm SD ($n = 10-15$). Means with different letters are significantly different ($P < 0.05$, Tukey's test). Scale bar = 1 cm. **(C)** Rescue of QC differentiation of *als1* by *atr* mutation. Seedlings of WT, *atr*, *als1*, and *als1atr* harboring QC46 (QC-specific marker) were grown on a soaked gel medium containing 0 or 1.5 mM Al for 7 d and the roots were stained with GUS staining solution and observed under a microscope. Scale bar = 50 μ m.