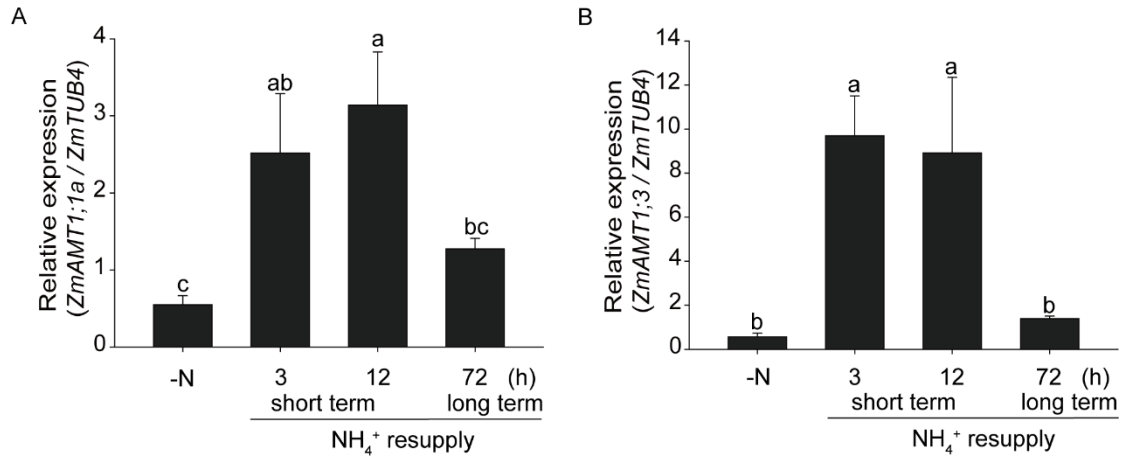Appendix A. Expression of *ZmAMT1;1a* and *ZmAMT1;3* in shoots following NH_4^+ resupply to N-deficient maize plants. Ten-day-old hydroponically-grown maize were subjected to N starvation for 4 d, and then resupplied with 4 mmol L^{-1} NH_4^+ for 6/18 or 72 h. A-B, relative expression level of *ZmAMT1;1a* (A) and *ZmAMT1;3* (B) in maize shoots. Transcript accumulation of indicated genes was quantified by qPCR. Bars represent mean±SD (*n*=3). Significant differences at *P*<0.05 according to Duncan's test are indicated by different letters.

| 1.000 | 0.991 | 0.995 | 0.679 | 0.968 | 0.316 | *ZmAMT1;1a* expression |
| 0.991 | 1.000 | 0.972 | 0.575 | 0.993 | 0.440 | *ZmAMT1;3* expression |

ZmAMT1;1a expression / *ZmAMT1;3* expression / $^{15}NH_4^+$ influx / NH_4^+ concentration / Glutamine concentration / Other amino acids concentration

Appendix B. Correlation coefficients of *ZmAMT1s* expression with $^{15}NH_4^+$ influx, tissue NH_4^+, glutamine and amino acid concentrations in roots of maize. Data came from experiments described in Fig. 3 and Fig. 4, and the correlation coefficients were calculated according to *Pearson* analysis.

Appendix C. Expression of *ZmAMT1;1a* and *ZmAMT1;3* in maize roots with short- (3 and 12 h) or long-term (72 h) NH_4^+ resupply. Ten-day-old hydroponically-grown maize were subjected to N starvation for 4 d, and then resupplied with 4 mmol L^{-1} NH_4^+ for 3, 12, or 72 h. A-B, relative expression of *ZmAMT1;1a* (A) and *ZmAMT1;3* (B) in maize roots under different time points of NH_4^+ resupply. Relative expression of indicated gene was quantified by qPCR, and normalized by *ZmTUB4* expression. Bars indicate mean±SD (*n*=3). Significant differences at *P*<0.05 according to Duncan's test are indicated by different letters.