

Figure S1

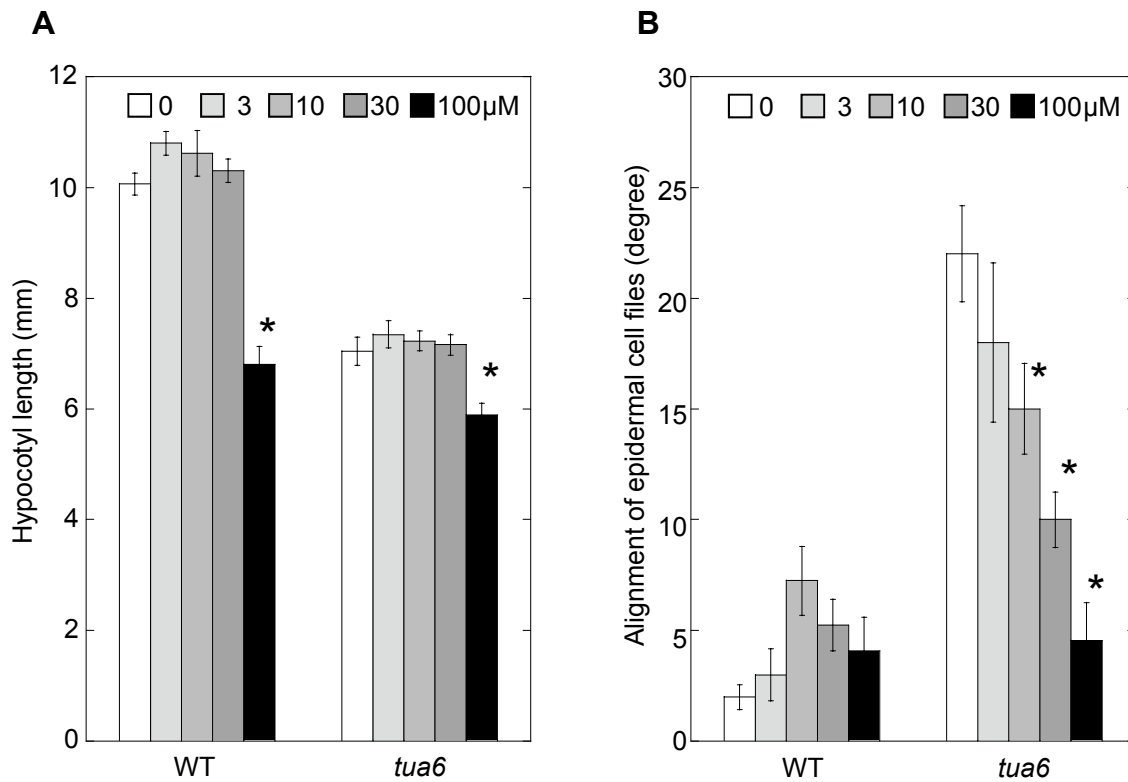


Figure S1. Effects of gadolinium ions on elongation growth and alignment of epidermal cell files in hypocotyls of *Arabidopsis tubulin* mutants. For gadolinium treatment, *Arabidopsis* seedlings were grown on agar medium containing various concentrations of gadolinium chloride at 1 g for 72 h at 25°C. (A) The length of hypocotyls was measured using a scale. (B) The angle of epidermal cells 10-12 was measured as in Figure 4. Values are means \pm SE (n = 20). *, Mean values significantly different from the control (in the absence of gadolinium) (P<0.05).

Figure S2

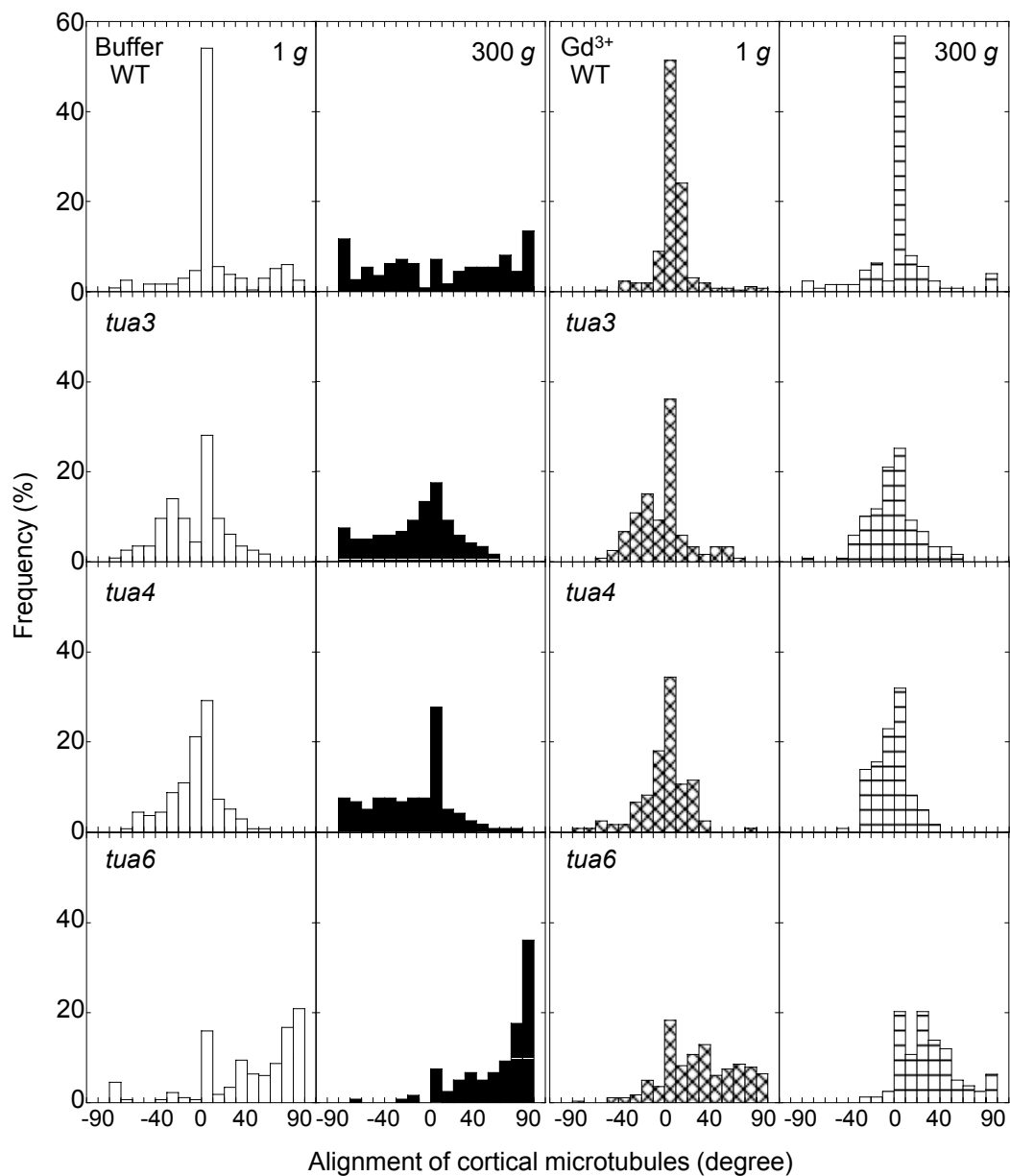


Figure S2. Effects of gadolinium ions on alignment of cortical microtubules in Arabidopsis tubulin mutants. WT and tubulin mutants were grown as in Figure 8. Epidermal cells 10-12 were stained as described in MATERIALS AND METHODS. All values were taken from immunofluorescence micrographs in the region, as shown in Figure 9A.

Figure S3

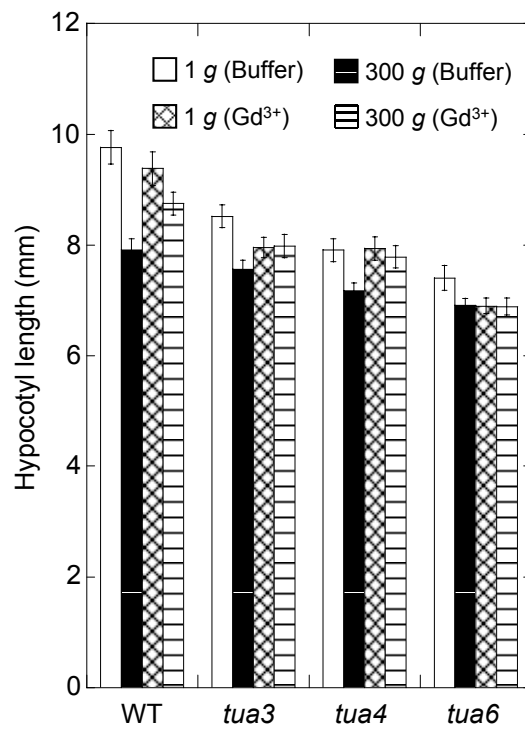


Figure S3. Effects of gadolinium ions on elongation growth in hypocotyls of Arabidopsis tubulin mutants. WT and tubulin mutants were grown as in Figure 8. The length was measured using a scale. Values are means \pm SE (n = 20).