3 - 33 Dose Effects of Neon Irradiation on Root and Hypocotyl Growth of *Arabidopsis thaliana*

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Arabidopsis thaliana has many advantages for plant research, including a short generation time, small size, large number of offspring, and a relatively small nuclear genome. These advantages promoted deepen scientific investigation for various biological issues and characterized many genes using *Arabidopsis thaliana*[1].

In this study, dry seeds of *Arabidopsis thaliana* were irradiated by neon ion beams from 100 to 500 Gy. Then about 10 dry seeds were sown on Murashige and Skoog medium, each treatment group repeated for three times, and all the culture dishes were grown in the culture rooms with the condition of 22 ° C under 18 h-light/6 h-dark cycle. Image J software was used to measure the length of roots and hypocotyl from the digital photos taken on the 7th day after sowing.

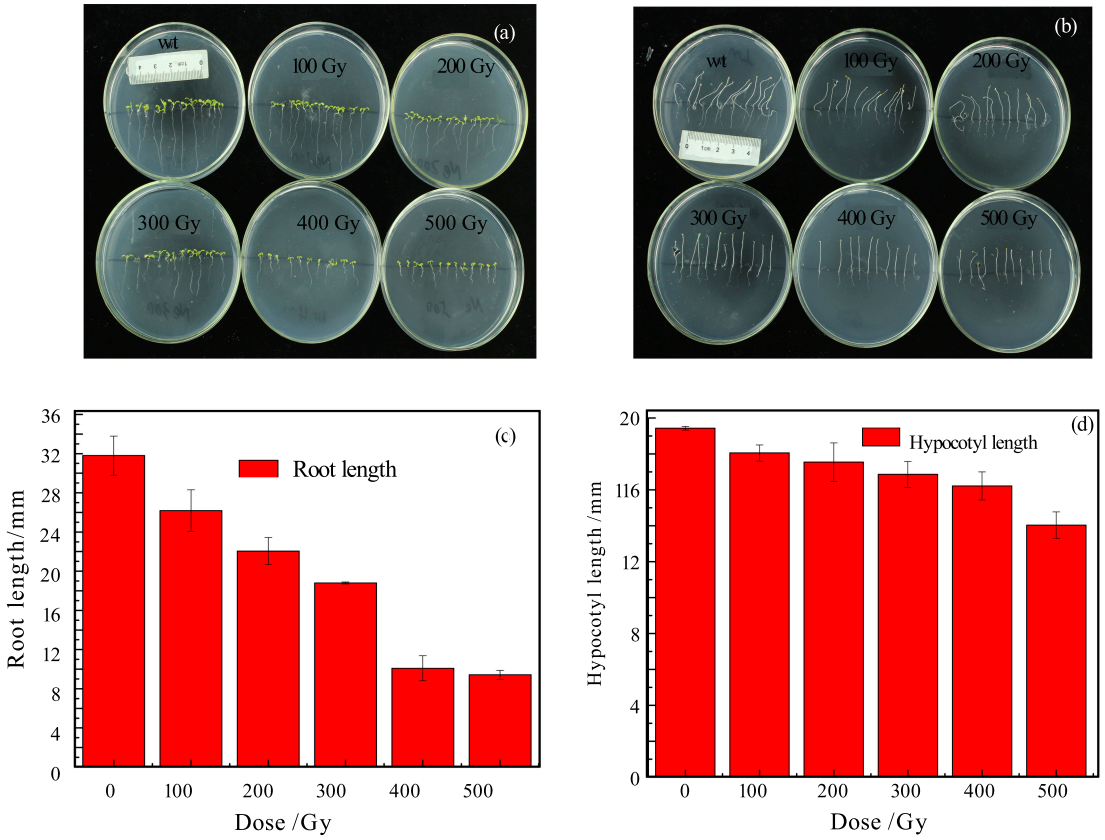

Fig. 1 (color online) Root and hypocotyl length of *Arabidopsis thaliana* seedlings irradiated by neon ion beams.

As shown in Figs. 1(a) and (b), the germination rates of *Arabidopsis thaliana*has no difference after irradiation of different doses of neon ion beam and the values are almost 100% at each dose. However, the lengths of roots and hypocotyls (Figs. 1(c) and (d)) are declined with the increase of the dose of neon ion beam, but the effects on hypocotyls are not so obviously as that on roots. This may be ascribed to the different sensitivity of root and hypocotyl to neon ion beam irradiation. In contrast, roots are more sensitive on neon ion beam.

Reference

[1] D. W. Meinke, J. M. Cherry, C. Dean, et al., Science, 282(1998)662.