

## **Bioaccumulation of lead in young leaves of eelgrass *Zostera marina* L.**

J. Hiromi<sup>1</sup>, E. Takada<sup>1</sup>, K. Ara<sup>1</sup> and K. Sera<sup>2</sup>

<sup>1</sup>Graduate School of Biorresource Sciences, Nihon University  
1688 Kameino, Fujisawa, Kanagawa 252-8510, Japan

<sup>2</sup>Cyclotron Research Center, Iwate Medical University  
348-58 Tomegamori, Takizawa, Iwate 020-0173, Japan

### **Abstract**

To evaluate the possibility of the eelgrass *Zostera marina* as a phyoremediator for a metal pollution of lead (Pb) in neritic environments, bioaccumulation by young leaves of the eelgrass was studied laboratory experiments. Eelgrass plants were incubated up to 7 days in 0.25, 0.5, 2.5 and 5 ppm-seawater concentrations of Pb. The concentrations of the metal in young leaves were  $4.9 \pm 2.9$ ,  $5.9 \pm 2.8$ ,  $39.6 \pm 20.3$  and  $786.6 \pm 282$  ppm at the respective exposed concentrations. This result shows that young leaves accumulate the metal exponentially from 2.5 to 5 ppm. The relationship between the metal accumulation (AC) at 7 days after the initial exposure and exposed concentration (EC) was described as  $\log AC = 1.61 \log EC + 1.41$ . The present result was compared with the previous study on the accumulation of Pb in the same eelgrass, and it was revealed that the expected AC at the EC of 10 ppm was similar to the previous study. No significant effects on the growth of eelgrass were observed in all experiments.