

Korea Lungless Salamander p53 Gene as Novel Biomarker for Genotoxins  
in Arsenic-contaminated Nackdong Mine Areas

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This paper describes the possibility of Korea lungless salamander as novel biomarker of heavy metal and As contaminated water. In researching the pollution level of Nack-dong abandoned Au mine, we found normal shaped lungless salamander in the upper uncontaminated stream but abnormal shaped one was sampled in small stream drained from abandoned Au mine. Arsenic concentration of the mine water was significantly high but As levels of water which is 50m away from the stream was not high. One leg was lost and skin texture was not smooth in this abnormal salamander sample. We assumed that the abnormal salamander has been exposed to heavy metals and As during pregnancy. In order to investigate gene damage, we divided salamander into 4 parts (head, body, three legs and tail) and p53 mutation was examined. Mutation screening is carried out by SSCP and the result of abnormal gene sequencing confirmed the mutation. Lungless body shows mutation in 4 parts and normal salamander shows no mutation. 12S gene and 16S rDNA sequence revealed that this salamander was regarded as *Onychodactylus fischeri* with 96.8% of similarity. Salamander may live in the uncontaminated fresh brook and it may be used as biomarker of heavy metal and As contamination.

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**Key words:** Nackdong abandoned mine, *Onychodactylus fischeri*, p53 gene, 12S rDNA, 16S rDNA, biomarker

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