

PD10) Anti-Ecotoxicological Effects DBD Glycoprotein Isolated from *Dioscorea batatas* Decne Attenuate Fecal Malodor and Increase Feed Efficiency in Mice

Do-Wan Kim · Jeong-Bae Park · Taesun Min¹⁾ · Sei-Jung Lee
대구한의대학교 제약공학과, ¹⁾제주대학교 생명공학과

1. 서론

This study was carried out to investigate the functional role of 30 kDa glycoprotein isolated from *Dioscorea batatas* Decne (DBD glycoprotein) in the promoting of feed efficiency and fecal odorous diminution in mice. DBD glycoprotein has an inhibitory effect on the viability of gastrointestinal epithelial HT-29 cells induced by ecotoxicological endocrine disrupting substance, Bisphenol A (BPA). In addition, the weight of internal organ (liver, heart, kidney, and spleen) and the level of serum Glutamate Pyruvate Transaminase (GPT), Glutamate Oxaloacetate Transaminase (GOT), and Lactate Dehydrogenase (LDH) did not appear to significantly change in mice given oral injection of DBD glycoprotein for 2 weeks, compared to the controls. Interestingly, DBD glycoprotein has the ability to reduce the level of hydrogen sulfide (H₂S) in fecal malodor. Also, DBD glycoprotein has the effect to improve feed efficiency in mice. Collectively, these results indicate that DBD glycoprotein is a cytoprotective effect on the gut to improve food efficiency and fecal odorous diminution.

2. 참고문헌

- McSweeney, C. S., Palmer, B., Bunch, R., Krause, D. O., 2001, Effect of the tropical forage calliandra on microbial protein synthesis and ecology in the rumen, *J. Appl. Microbiol.*, 90, 78-88.
- Ra, J. C., Han, H. J., Song, J. E., 2004, Effect of probiotics on production and improvement of environment in pigs and broilers, *Journal of Preventive Veterinary Medicine*, 28.
- Zahn, J. A., DiSpirito, A. A., Do, Y. S., Brooks, B. E., Cooper, E. E., Hatfield, J. L., 2001, Correlation of human olfactory responses to airborne concentrations of malodorous volatile organic compounds emitted from swine effluent, *J. Environ. Qual.*, 30, 624-634.