

D19 Hordein에 특이한 Polyclonal Antibody의 생산 및 검정

이성신, 박문용, 남중현, 김재철, 김정곤, 박광근, 서용원[†]

고려대학교 식량자원학과

Production and identification of Anti-Hordein Polyclonal Antibodies(Anti-hordein PAb) in barley

Lee, S. S., M. W. Park, J. H. Nam, J. C. Kim, J. G. Kim, K. G. Park, and Y. W. Seo[†]

Department of Agronomy Korea University

1. Objective

The objectives of this research were to produce and identify polyclonal antibodies specific to hordein isoforms whose amount and composition were influenced in the suitability and quality of the grain for its final end-uses.

2. Materials and Methods

- o Plant materials - "Olbori", "Suwon18", and barley lines with different genetic background on hordein subunits.
- o Antibody production - Newzealand white rabbits were injected with hordein emulsion for producing anti-hordein polyclonal antibody. Immunoblotting and titer test were conducted for the characterization of anti-hordein polyclonal antibody.

3. Results and Discussion

- ① In the SDS-PAGE, Polymorphisms of hordein subunits (especially B and C) were observed among one-hundred eight of cultivars and experimental lines.
- ② As results of dot blot assay, anti-hordein polyclonal antibody reaction were decreased as antigen concentrations were decreased.
- ③ Produced anti-hordein polyclonal antibody was identified as specific reaction to hordein subunits in immunoblot assay.
- ④ As results of ELISA, high coefficient of determination ($r^2=0.98$) was obtained from antigen ranges between $1/5^2$ - $1/5^5$ at antibody dilution to 1/200 and 1/400.
- ⑤ Producted anti-hordein polyclonal antibody was expected to identify barley cultivars and experimental lines and to quantify hordein with different genetic backgrounds.

[†] Tel : 02-3290-3005, E-mail : seoag@kuccnx.koera.ac.kr

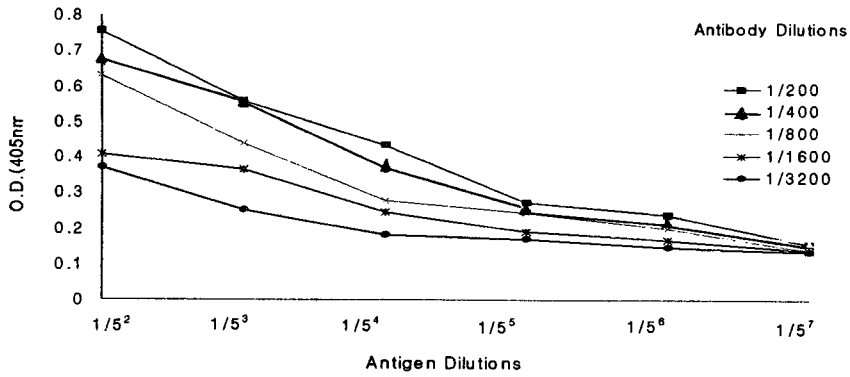


Fig. 1. Reaction of produced polyclonal antibody to hordein in barley.

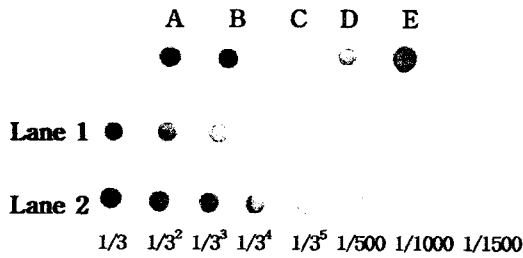


Fig. 2. Reaction of produced antibody and hordein using dot blot assay. A: straight gliadin extracted from wheat, B: gliadin diluted to 1/2, C: BSA, D: hordein dissolved in PBS, E: hordein dissolved in 55% isopropyl alcohol. Lane 1 is hordein dissolved in PBS and lane 2 is hordein dissolved in isopropyl alcohol. Hordein was diluted from 1/3 to 1/1500.

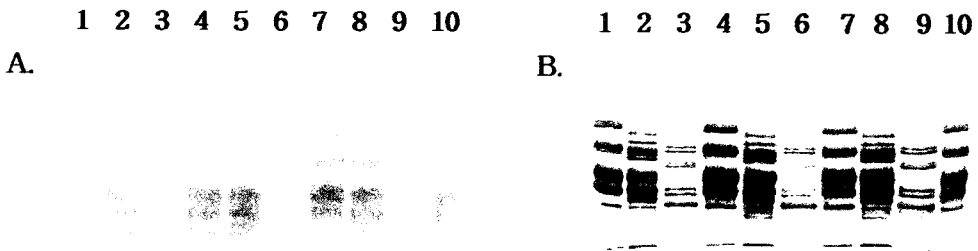


Fig. 3. A. SDS-PAGE of hordein in 'Olbori', 'Suwon272' and gliadin in 'Urimil'. Lane 1, 4, 7, 10: hordein in Olbori, lane 2, 5, 8: hordein in Suwon 272, and lane 3, 6, 9: gliadin in Urimil. B. Immunoblotting of hordein and gliadin. Lane numbers and sources are same as Fig. 3. A.