Antigenic specificity of serum antibodies in mice fed soy protein - DTU Orbit (23/01/2019)

**Antigenic specificity of serum antibodies in mice fed soy protein**

**Background:** Soybean protein is used in a number of food products but unfortunately is also a common cause of food allergy. Upon ingestion of soy protein, healthy mice like other animals and humans generate a soy-specific antibody response in the absence of signs of illness. Not much is known about the relationship between the immunogenic proteins involved in this nondeleterious antibody response and the pathological response associated with food allergy. The objective of the present study was to characterize the antigenic specificity of the soy protein-specific antibody response generated in healthy mice ingesting soy protein. Methods: Blood from mice fed a soy-containing diet was analyzed using ELISA and immunoblot for antibody reactivity towards various soy protein fractions and pure soy proteins/subunits. Mice bred on a soy-free diet were used as controls. Results: The detectable antigenic specificity of the serum antibodies of soy-consuming mice comprised glycinin and beta-conglycinin. Immunoblots with soy protein extract demonstrated antibody reactivity towards both the basic and the acidic chains of glycinin and the beta-conglycinin subunits with an individual response pattern among mice. Moreover, antibody reactivity was found towards the native quaternary structure of glycinin. Conclusions: Mice ingesting soy protein generate an antibody response with reactivity towards glycinin and beta-conglycinin. Antibody reactivity found towards the native quaternary structure of glycinin indicates an oral immunogenicity of the highly processing-resistant oligomerized glycinin.

**General information**

State: Published
Organisations: Enzyme and Protein Chemistry, Department of Systems Biology
Contributors: Christensen, H. R., Bruun, S., Frøkjær, H.
Pages: 58-67
Publication date: 2003
Peer-reviewed: Yes

**Publication information**

Journal: International Archives of Allergy and Immunology
Volume: 132
Issue number: 1
ISSN (Print): 1018-2438
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.52 SJR 0.989 SNIP 0.883
Web of Science (2017): Impact factor 2.437
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.61 SJR 1.055 SNIP 1.068
Web of Science (2016): Impact factor 2.72
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.48 SJR 1.217 SNIP 1.056
Web of Science (2015): Impact factor 2.677
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.57 SJR 0.982 SNIP 1.056
Web of Science (2014): Impact factor 2.673
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.36 SJR 0.872 SNIP 1.09
Web of Science (2013): Impact factor 2.433
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.28 SJR 0.854 SNIP 0.917
Web of Science (2012): Impact factor 2.248
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.47 SJR 0.995 SNIP 1.016