

Lectin, Fucose Specific

Lectins recognize oligosaccharides and specifically well reversibly binded ones. Thus, lectins are widely utilized in cell biology related fields such as blood-type studies and binding studies of oligosaccharides to cancer cell surfaces, and many other important studies.¹⁾ Lectins are widely distributed in nature and found from almost all types of living beings organisms like plants, microorganisms, fungus, invertebrates, vertebrates and viruses.

The product introduced today is a new-type of lectin isolated from *Aspergillus oryzae* in Japanese sake fermentation. This lectin has proven to have a strong affinity toward L-fucose according to the results of hemagglutination inhibition assay.²⁾ The fucose bonding position shows the highest binding for oligosaccharides are the ones containing L-Fuc α 1,6 and α 1,2. Fucosyl residues α 1,3 and α 1,4 also possess the specificity. The molecular weight of L-fucose specific lectin subunit, a dimeric substance, showed 35,000 (Fig. 1). This lectin shows 26% similarity to lectine isolated from *Aleuria aurantia*,²⁾ and its substrate specificity is also thought to be relatively similar.

Generally, lectins have been applied for the detection and the analysis of complex-type oligosaccharides as they can specifically recognize oligosaccharides. Especially, the ones with fucose typically possess physiological properties. Therefore, these lectins are often used for such purposes. For example, fucosylated oligosaccharides are known to participate in the life processes such as embryonic growth, differentiation, cell recognition, canceration, and inflammation. When *in-vivo* transformations of the fucose to oligosaccharides take place, such reactions are recognized as important indications of the antigen epitopes for the Lewis blood-type and cancer related carbohydrate antigens.³⁾ The *Aspergillus oryzae* fucose specific lectin is not only utilized as an analyzing tool for the sugar-binding specificity of complex-type oligosaccharides, but it is highly applicable for a wide spectrum of studies on oligosaccharides.

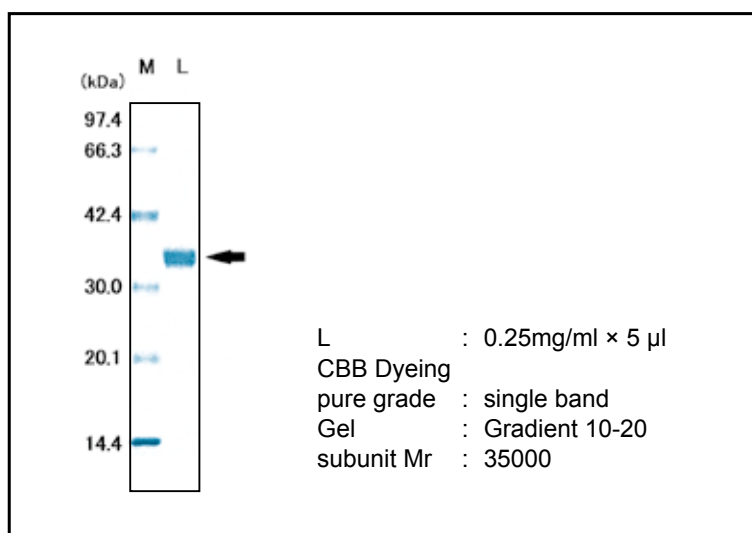


Fig.1. SDS-PAGE

L0169 Lectin, Fucose specific, from *Aspergillus oryzae* (HA : 15.6 μ g/ml) (5 mg/ml, PBS pH 6.5)

1ml

This lectin was merchandised under the technical tie-up with GEKKEIKAN SAKE COMPANY, LTD.

References

- 1) N. Sharon, H. Lis, Lectins (Japanese translation), Japan Scientific Societies Press: Tokyo, 1990.
- 2) Molecular cloning and overexpression of fleA gene encoding a fucose-specific lectin of *Aspergillus oryzae*
H. Ishida, T. Moritani, Y. Hata, A. Kawato, K. Suginami, Y. Abe, S. Imayasu, *Biosci. Biotechnol. Biochem.*, **2002**, 66(5), 1002.
- 3) H. Narimatsu, *Tanpakushitsu Kakusan Koso*, **1998**, 43(16), 2394.

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