

## CLINICAL SPECIFICATIONS

# LENTIL LECTIN + PEA LECTIN

### Function:

Lectins are carbohydrate binding proteins in plants and are important as physiologically active ingredients. Dietary lectins can adversely influence both enterocyte and lymphocyte structure and function, which have been shown to contribute to autoimmune reactivity.<sup>3</sup>

### Associated With:

Lentil Lectin immune reactivity  
Pea Lectin Immune Reactivity

**Known Cross-Reactions:** A $\beta$ <sub>42</sub> peptide;<sup>1</sup> other legume lectins<sup>2</sup>

### Clinical Significance:

Using anti-A $\beta$ <sub>42</sub> peptide antibody, Vojdani and Vojdani showed strong immunoreactivity between this antibody, lentil lectin and pea lectin.<sup>1</sup> Antibodies against lentil lectin and pea lectin may therefore play a role in the pathogenesis of Alzheimer's disease (AD). Dietary lectins may contribute to autoimmunity, including neuroautoimmunity, due to their affinity for binding to specific human tissues. Lentil Lectin binds to myelin, skin, buccal mucosa, colonic mucosa, connective tissue, thyroid, kidney and prostate; Pea Lectin binds to connective tissue, skeletal muscle and eye.<sup>3</sup> In a study on amyloid beta cross-reactivity, Pea Lectin, and to a greater degree, Lentil Lectin were shown to be cross-reactive.<sup>1</sup> Thus, they may be involved in amyloidogenesis. Due to cross-reactivity with amyloid beta peptide,<sup>1</sup> patients with circulating antibodies to lentil or pea lectins may be at greater risk for AD and other neurological disorders when the blood-brain barrier is breached. This means that in order to reverse cognitive decline in a neurodegenerative disease, it is necessary to identify and remove the triggering factors that are causing the brain's defenses to misfire and produce a harmful instead of protective amyloid response.<sup>1</sup> The detection of these IgG antibodies, along with eliminating these lectins from the diet, plus limiting exposure to toxic chemicals and pathogens, may be effective steps in the prevention and early reversal of cognitive decline.

### References:

1. Vojdani and Vojdani. Immunoreactivity of anti-A $\beta$ P-42 specific antibody with toxic chemical food antigens. *J Alzheimers Dis Parkinsonism*, 2018; 8(3):1-11.
2. Hankins et al. Legume Lectins: I. Immunological cross-reactions between the enzymic lectin from mung beans and other well characterized legume lectins. *Plant Physiol*, 1979; 64(1):104-107.
3. Freed. Chapter 34: Dietary lectins and disease. In *Food Allergy and Intolerance*, 2nd Edition, Brostoff J and Challacombe SJ (eds), Saunders Ltd, London, 2002: pp 479-488.