



## ARTHRITIC PEPTIDE

### FUNCTION:

Arthritic peptide, glucose-6-phosphate isomerase, is an endogenous molecule associated with joints. This cytoplasmic enzyme catalyzes the second step of glycolysis and is found at low levels in serum. Arthritic peptide can stimulate KRN T cells when processed and presented by antigen presenting cells.

### ANTIBODIES APPEAR:

Mixed Connective Tissue Disease<sup>1</sup>  
 Osteoarthritis<sup>2</sup>  
 Rheumatoid Arthritis<sup>1 2 3</sup>

### KNOWN CROSS-REACTIONS:

Gliadin, Dairy proteins, Pork<sup>4</sup>

### CLINICAL SIGNIFICANCE:

High levels of antibodies to arthritic peptide are found in patients with mixed connective tissue diseases including rheumatoid arthritis.<sup>1 3</sup> Musculoskeletal manifestations of Celiac disease include metabolic bone disease, muscle weakness, osteoarthritis, osteomalacia and polymyalgia rheumatic.<sup>2</sup> Due to mucosal immune over-activation in rheumatoid arthritic patients, there is high cross-reactivity between joint tissues and foods, notably gluten, dairy peptides and pork.<sup>4</sup> Thus, for better outcome with autoimmune arthritic patients, a tailored diet should be implemented.

### References:

1. Basu D, et al. Molecular basis for the recognition of an arthritic peptide and a foreign epitope on distinct MHC molecules by a single TCR. *J Immunol*, 2000; 164:5788-5796.
2. Bourne JT, et al. Arthritis and coeliac disease. *An Rheum Dis*, 1985; 44:592-598.
3. Francis J, et al. The prevalence of coeliac disease in rheumatoid arthritis. *Eur J Gastroenterol Hepatol*. 2002; 14:1355-1356.
4. Hvatum M, et al. The gut-joint axis: cross reactive food antibodies in rheumatoid arthritis. *Gut*, 2006; 55:1240-1247.