



COLLAGEN COMPLEX

FUNCTION:

Collagen is a group of proteins found in the flesh and connective tissues. The most abundant protein of the human body, Collagen is the main component of connective tissue. Collagen is found in tissues such as tendon, ligament and skin, and is also abundant in cornea, cartilage, bone, blood vessels, the gut, and intervertebral disc. The fibroblast is the most common cell which creates collagen. In muscle tissue, collagen serves as a major component of the endomysium.

ANTIBODIES APPEAR:

Arthritis⁴
 Goodpasture's Syndrome*¹
 Type 1 Bullous SLE³

*rat study

KNOWN CROSS-REACTIONS:

Clostridium botulinum, RNA polymerase
 20-32, *Streptococcus pyogenes*¹

CLINICAL SIGNIFICANCE:

High levels of antibodies to Collagen Complex are noted in autoimmune arthritic disorders.^{3,4} Circulating antibodies to collagen appear years before the clinical onset of arthritic conditions and is therefore considered an early biomarker or predictor of autoimmune arthritis.²

Blistering seen in bullous systemic lupus erythematosus may not always be widespread as shown by Fujii et al,³ they can develop on limited parts of the body. Circulating collagen antibodies demonstrate the involvement of an autoimmune mechanism.³

In a rat study, Arends et al. were able to show that infections with microbial peptides may induce antiglomerular basement membrane disease or Goodpasture's syndrome through T cell epitope mimicry.¹

*rat study

References:

1. Arends J, et al. T cell epitope mimicry in antiglomerular basement membrane disease. *J Immunol*, 2006; 176:1252-1258.
2. Dzhambazov B, et al. Therapeutic vaccination of active arthritis with a glycosylated collagen type II peptide in complex with MHC class II molecules. *J Immunol*, 2006; 176:1525-1533.
3. Fujii K, et al. Detection of anti-type VII collagen antibody in Sjögren's syndrome/lupus erythematosus overlap syndrome with transient bullous systemic lupus erythematosus. *Br J Dermatol*, 1998; 139:302-306.
4. Khare SD, et al. Oral administration of immunodominant human collagen peptide modulates collagen-induced arthritis. *J Immunol*, 1995; 155(7):3653-3659.