

# Combined inhibition of TNF-alpha, IL-17 effective in RA model

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(HealthDay)—Combined inhibition of tumor necrosis factor (TNF)  $\alpha$  and interleukin (IL)-17 is more effective than single blockade in cultures of human fibroblast-like synoviocytes (FLS), according to an experimental study published in the January issue of *Arthritis & Rheumatology*.

Jens A.A. Fischer, Ph.D., from Roche Pharmaceutical Research and Early Development in Penzberg, Germany, and colleagues stimulated cultures of FLS with TNF $\alpha$ , IL-17, or both. They examined in vitro cytokine responses and in vivo development of arthritis and bone and cartilage destruction in TNF $\alpha$ -transgenic mice using single/combined neutralizing antibodies against TNF $\alpha$  and IL-17. The authors designed bispecific anti-TNF $\alpha$ /IL-17 antibodies and assessed their potential to block cytokine responses in FLS.

The researchers found that in FLS, TNF $\alpha$  and IL-17 had synergistic effects in promoting production of IL-6, IL-8, and granulocyte colony-stimulating factor, as well as matrix metalloproteinases. Superior efficacy was seen with bispecific anti-TNF $\alpha$ /IL-17 antibodies in blocking cytokine and chemokine responses in vitro. In arthritic mice, using neutralized antibodies, dual versus single [inhibition](#) of both cytokines was more effective in inhibiting the development of inflammation and bone and cartilage destruction.

"Bispecific anti-TNF $\alpha$ /IL-17 antibodies may have superior efficacy in the treatment of [arthritis](#) and may overcome the limited therapeutic responses obtained with single cytokine neutralization," the authors write.

Several authors disclosed financial ties to the pharmaceutical and biotechnology industries; several authors have a pending patent application for TNF $\alpha$ /IL-17 bispecific [antibodies](#).

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