

IN BRIEF

RHEUMATOID ARTHRITIS

Piperine, the active phenolic component in black pepper extract, showed anti-inflammatory effects on interleukin-1 β -stimulated human fibroblast-like synoviocytes from patients with rheumatoid arthritis in a dose-dependent manner at 10–100 μ g/ml. Treatment with piperine significantly reduced nociceptive and arthritic symptoms in rat models of acute paw pain and arthritis. The inflammatory area in the ankle joints was significantly reduced by piperine, as shown by histology.

Original article Bang, J. S. *et al.* Anti-inflammatory and anti-arthritic effects of piperine in human interleukin-1 β -stimulated fibroblast-like synoviocytes and in rat arthritis models. *Arthritis Res. Ther.* **11**, R49 (2009).

THERAPY

A single-chain antibody (ESBA105) directed against tumor necrosis factor (TNF) was as effective as a full-length anti-TNF IgG, infliximab, in cell culture at inhibiting its target molecule. *In vivo*, ESBA105 potently inhibited TNF-induced inflammation, infiltration and proteoglycan loss from cartilage, and was shown to rapidly penetrate into cartilage, whereas infliximab remained on the surface.

Original article Urech, D. M. *et al.* Anti-inflammatory and cartilage-protecting effects of an intra-articularly injected anti-TNF- α scFv (ESBA105) designed for local therapeutic use. *Ann. Rheum. Dis.* doi:10.1136/ard.2008.105775

SPONDYLOARTHROPATHIES

In a study of 40 patients with HLA-B27-positive, MRI-determined early axial sacroiliitis, treatment with 5 mg/kg infliximab resulted in a significantly higher rate of resolution of MRI lesions and a greater improvement in several clinical assessments, compared with placebo treatment, at 16 weeks. In addition, the treatment was well tolerated, and no serious adverse events were observed.

Original article Barkham, N. *et al.* Clinical and imaging efficacy of infliximab in HLA-B27-positive patients with magnetic resonance imaging-determined early sacroiliitis. *Arthritis Rheum.* **60**, 946–954 (2009).

CONNECTIVE TISSUE DISEASES

Regulatory T-cell function is often impaired in patients with systemic lupus erythematosus (SLE). In this study of patients with juvenile-onset SLE, numbers of immunosuppressive NKG2D⁺CD4⁺ T cells were shown to inversely correlate with disease activity, which might be of clinical relevance. These T cells are autoreactive, can produce interleukin-10 and are distinct from proinflammatory and cytolytic CD4⁺ T cells that occur in rheumatoid arthritis and Crohn disease.

Original article Dai, Z. *et al.* Normally occurring NKG2D⁺CD4⁺ T cells are immunosuppressive and inversely correlated with disease activity in juvenile-onset lupus. *J. Exp. Med.* **206**, 793–805 (2009).