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Ankylosing spondylitis (*Klebsiella*), rheumatoid arthritis (*Proteus*) and multiple sclerosis (*Acinetobacter*) are autoimmune diseases caused by bacteria

Molecular mimicry between self-antigens and bacteria is the link that provides a scientific explanation for some autoimmune diseases. Ankylosing spondylitis occurs predominantly in individuals who possess HLA-B27. The bowel microbe *Klebsiella* contains sequences resembling HLA-B27. Rheumatoid arthritis occurs predominantly in individuals who possess HLA-DR1/4. The urinary microbe *Proteus* contains sequences which resemble HLA-DR1/4. Multiple sclerosis occurs predominantly in individuals who suffer from sinusitis. The maxillary sinus microbe *Acinetobacter* contains sequences which resemble myelin. Anti-myelin autoantibodies are thought to be involved in the pathology of multiple sclerosis. These specific bacterial discoveries provide a new approach to therapy.

Biography

Alan Ebringer graduated in medicine in Melbourne in 1962. He has published over 300 papers. Over the last 40 years, his group at King's College in London, has been studying the bacterial causes of several autoimmune diseases, using as a model "molecular mimicry" which explains how streptococcal infections cause rheumatic fever. His first book "Ankylosing spondylitis and *Klebsiella*" (Springer 2011) describes "molecular mimicry" between HLA-B27 and the bowel microbe *Klebsiella*. His second book "Rheumatoid arthritis and *Proteus*" (Springer 2012) demonstrates "molecular mimicry" between HLA-DR1/4 and the urinary microbe *Proteus* thereby explaining why this disease occurs more frequently in women. Over the last 20 years, his group has shown "molecular mimicry" between myelin, and the soil, skin and nasal microbe *Acinetobacter*. These results suggest that this microbe is involved in multiple sclerosis and bovine spongiform encephalopathy ("mad cow disease").

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