Differences in Activation of Matrix Metalloproteinases in Joint Fluid by Specific Strains of Borrelia burgdorferi

- **Borrelia burgdorferi Strain B31** Activates Matrix Metalloproteinase
  - Synoviocyte (Cell)
  - Synovial Joint Fluid
  - Matrix Protein Digestion
  - Lyme Arthritis

- **Borrelia burgdorferi Strain Geho** No Activation

**Chart 11**

Relationship Between Family, Genus, Species and Strain

- **Family:** Spirochaetaceae
  - 4 Genera
- **Genus:** Borrelia

- **Species:** burgdorferi
  - > 20 Species

- **Strain:** Geho, etc.
  - > 50 Strains

**Chart 16**

Similarity Between DNA Sequences of Brain Tissue and Bb OspA

DNA sequences of Bb outer surface protein A (OspA) compared with a data bank of DNA sequences of human neural tissue yielded three sequences that were identical. The three corresponding Bb peptides were synthesized and antibodies were induced against them. The antibodies cross-reacted with human neural tissues.

These findings imply that antibodies developed by Lyme disease patients against OspA will also bind to their own neural tissue, representing a form of autoimmune disease in which a person’s immune system attacks his own tissues. (21) See Chart 17.