

**Tubular filaments in the cytoplasm of *Paramecium bursaria***  
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By transmission electron microscopic observation, tubular filaments of 50–60 nm in diameter were found in the cytoplasm of *Paramecium bursaria*, extending from the surface of symbiotic *Chlorella* toward the inside of the cell. The tubular filaments appeared to be membranous structures, as they disappeared after treatment with Triton X-100, while subcortical microtubules remained intact after the detergent treatment. SDS-PAGE and Western blotting showed that *P. bursaria* possesses two proteins, of 35 kDa and 50 kDa, that react with  $\alpha$ -tubulin antibodies. The 50-kDa protein is most likely  $\alpha$ -tubulin, but the 35-kDa protein is unique to the cytoplasm of *P. bursaria*, and is neither detected in cilia nor originates from the symbiotic *Chlorella*. The origin of the protein and its relationship to the tubular filaments are obscure.