

Fate of 63-kDa periplasmic protein of infectious form of endonuclear symbiotic bacterium
Holospira obtusa during infection process

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Monoclonal antibodies were developed against a 63-kDa protein purified from the infectious form of *Holospira obtusa*, a macronucleus-specific endosymbiotic bacterium of the ciliate *Paramecium caudatum*. By indirect immunofluorescence microscopy, the mAbs were found to react with antigens localized in the periplasmic region of the infectious form, but not in the reproductive form of this bacterium or in other *Holospira* species. During infection, indirect immunofluorescence showed that the infectious form retained the antigens in the periplasm till they penetrated the host macronucleus. However, the antigens were no longer detected in the bacteria after invasion of the macronucleus. Instead, the fluorescence was detected in infected macronuclei, and the ratio of host cells with such fluorescence as well as the intensity of fluorescence increased with time. Whether the macronuclear fluorescence was bacterial or host in origin is unclear.