

Holospora obtusa disrupts the host digestive vacuole membrane to appear
in the host cytoplasm

Masahiro FUJISHIMA¹ and Chiho MORIKAWA²

(¹Dept. Env. Sci. and Engineering, Grad. School of Sci. and Engineering, Yamaguchi Univ., and ²Dept. of
Physics, Biol. and Informatics, Inst. of Fac. of Sci. Yamaguchi Univ.)

SUMMARY

The gram-negative bacterium *Holospora* is an endonuclear symbiont of the ciliate *Paramecium*. Infectious forms of *H. obtusa* ingested in the host's DV-I digestive vacuole escape from there with the bacterial invasion tip leading, and the DV-I vacuole is acidified and becomes a condensed DV-II vacuole. Indirect immunofluorescence microscopy with acidosome membrane-specific mAb showed that this mAb labeled the DV-I and DV-II vacuoles, and that digestive vacuole membrane pushed out by the invasion tip is disrupted before the bacteria escape from the vacuoles, indicating that the bacterium is not enclosed by the host's digestive vacuole membrane when it escapes from the digestive vacuole.