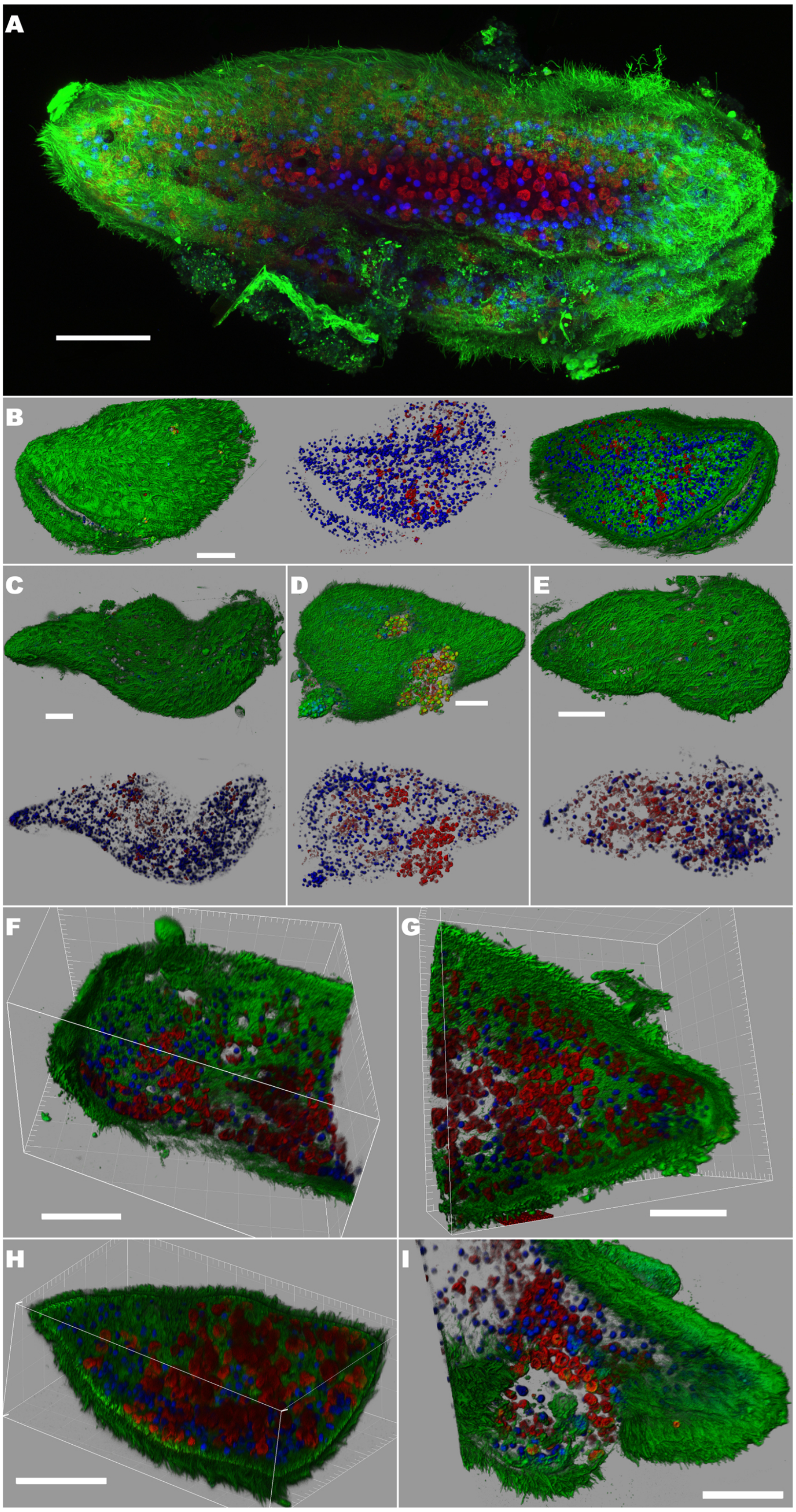
9. Acoel flatworm microscopy images and alignment of V9 sequence. Confocal laser scanning microscope images of the acoel flatworm (green) containing several microalgal cells intracellularly (red cells). Red, greenand blue indicate the chlorophyll/plasts , membranes, and DNA/nuclei, respectively. All the worm specimens that had been observed (>15) had displayed the endosymbiotic association with a microalgae (A-I). The lack of transparency of the worm and the low penetrationof the DiOC6 (for membranes) dye did not permit to reveal the full cellular structure (membranes, nuclei and chloroplast) of the algae when localized inside the worm body. The algae nuclei signal is also very dim. Only the chlorophyll autofluorescence signal allows discriminating the position of the algae inside the worm tissue (A, F-I). When the epidermis of the worm is damaged (D), the unicellular structure and the integrity of the symbiont cells that are released from the cut becomes obvious. The sequence alignment of the sequences amplified from DNA extracted from the putative host acoel worm shows they are identical to the microalgae barcode predicted as symbiont of the acoel worm.

A



B