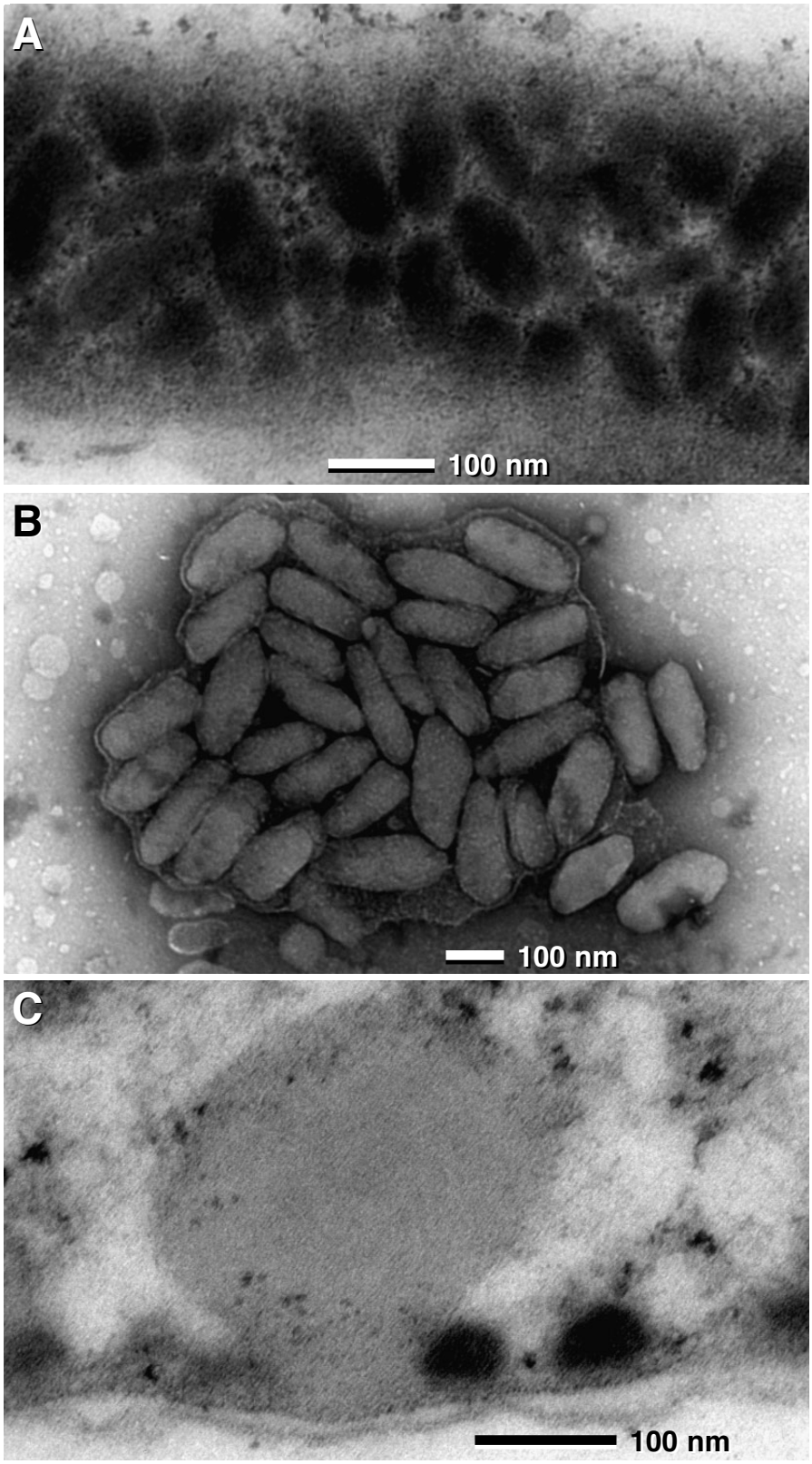

Figure S1
TEM of chlorosomes of the epibiont in situ (**A**) and after isolation and negative staining (**B**). The chlorosomes are rather freely orientated, covering 50-60% of the cytoplasmic membrane (**A**). Both, length and width of the chlorosomes vary in a wide range (**A; B**). **C** TEM of a lipid-body-like globule attached to the cytoplasmic membrane.

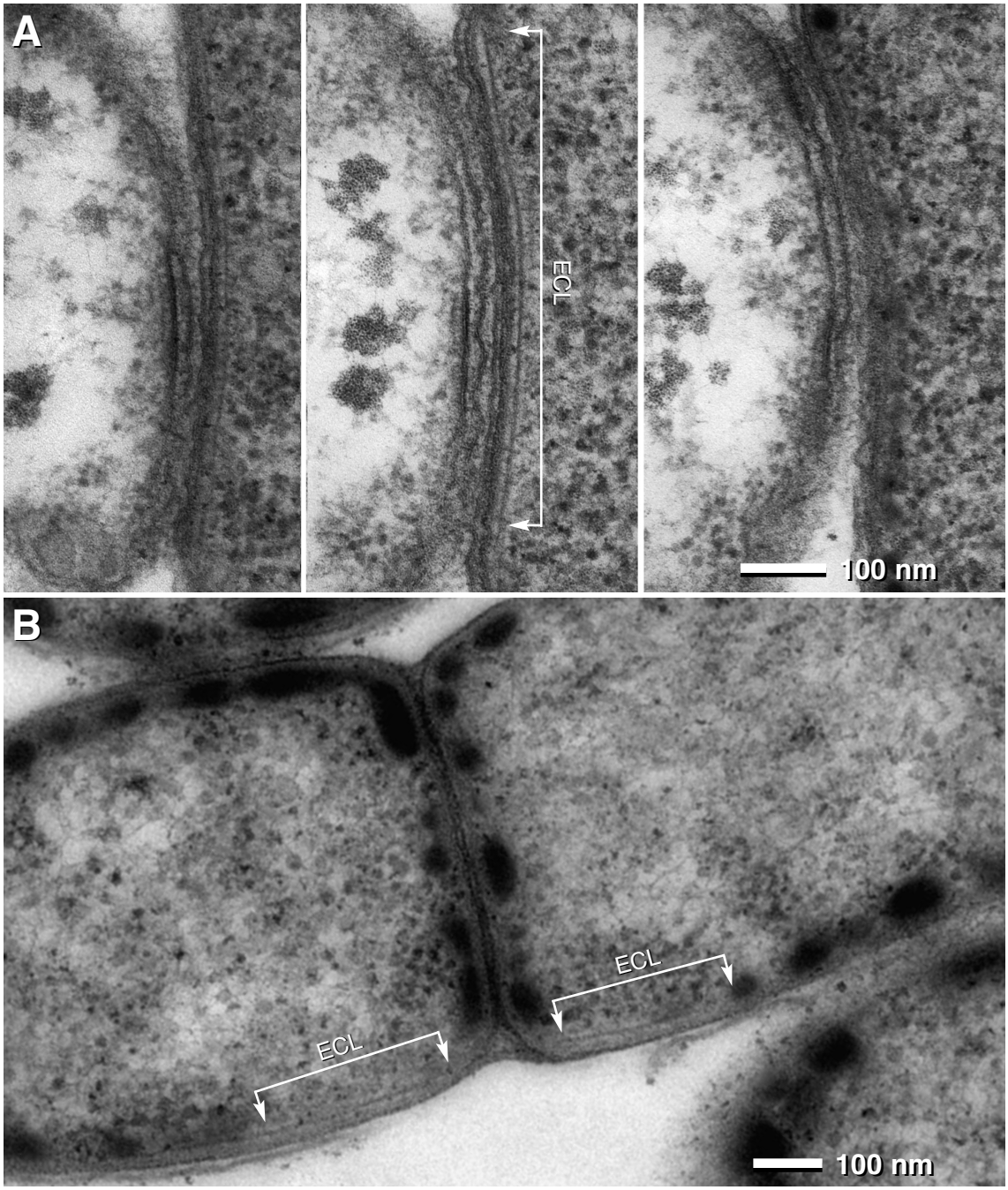

Figure S2
TEM of the epibiont contact layer (ECL). **A** Serial sections show that the ECL is rather narrow and therefore only visible on one to three consecutive sections. **B** The ECL of epibiont can be split during cell division.

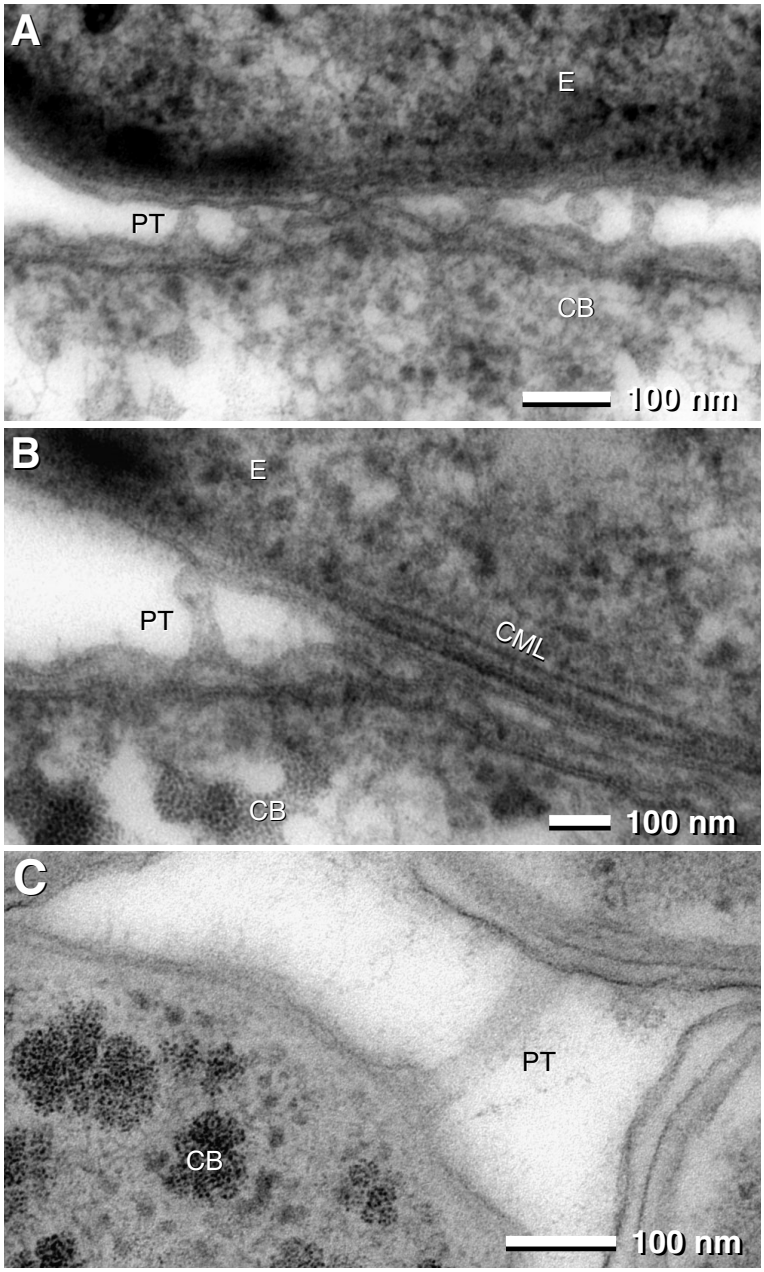

Figure S3
TEM of periplasmic tubules (PT) formed by the outer membrane of the central bacterium (CB). **A, B** PT in contact with the outer membrane of the epibionts **C** TEM of cryo-fixed and cryo-substituted specimen showing a PT in continuity with the outer membrane of the central bacterium and attached to the epibiont (E).

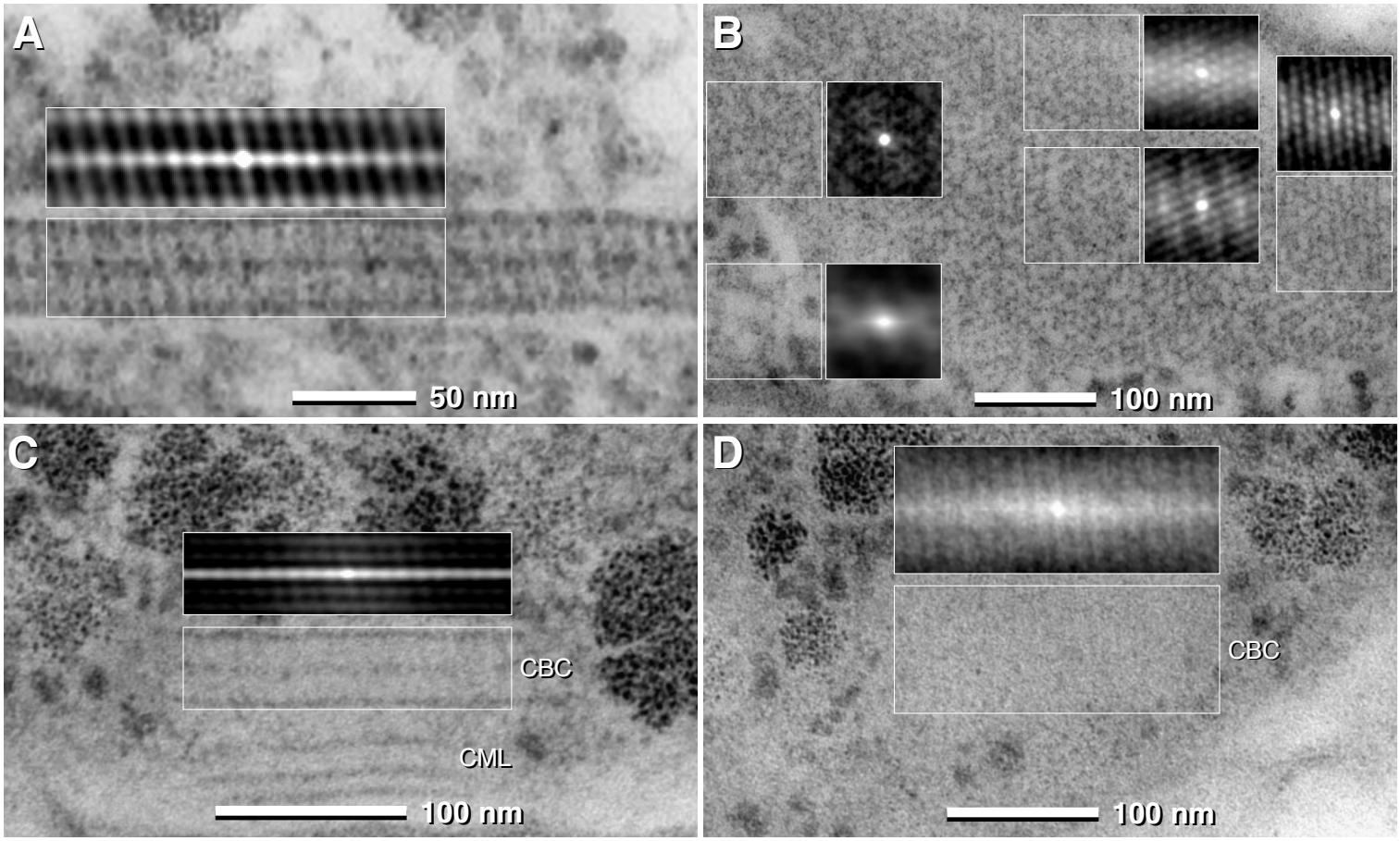

Figure S4
Transmission electron micrographs of ultrathin sections the central bacterium of “C. aggregatum” revealing paracristalline structures (central bacterium crystal, CBC).
A Detail of CBC showing a paracristalline zipper-like organization in cross sections; two less electron dense layers are bordered and separated by electron dense layers. Auto-correlation of CBC reveals oblique orientation of the subunits.
B Dependent on the section plane and the planity of the CBC, auto correlation of tangentially sectioned CBC shows transitional patterns between hexagonal and parallel segments.
C, D CBC after high pressure freezing and freeze substitution also show a paracristalline zipper-like organization when cross sectioned; a CML is present attached to the cytoplasmic membrane (**C**). Oblique sectioned CBC shows a pattern of parallel striations with a spacing of 9 nm (**D**).

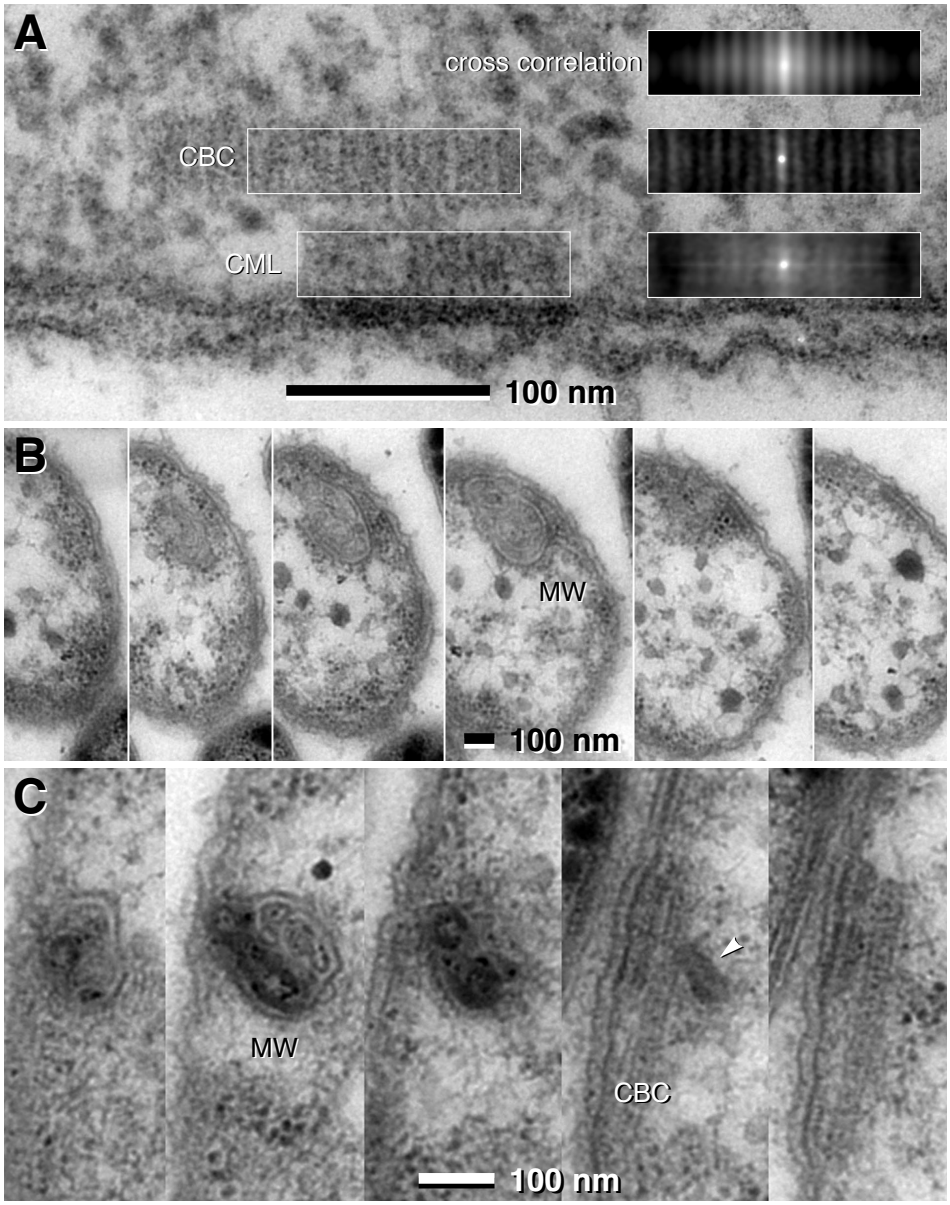

Figure S5
Transmission electron micrographs of ultrathin sections the central bacterium of “C. aggregatum” revealing the central bacterium membrane layer (CML) and membranous whirls (MW). **A** Auto-correlation and cross-correlation of oblique sectioned CML and CBC confirms that their subunit patterns are similar. **B, C** Serial sections of a MW prove that it is in contact with the cytoplasmic membrane and frequently with the CBC (**C**, arrowhead).