

## Expanded View Figures

**Figure EV1. Structural features of the pig sperm proximal centriole (PC).**

- A PC triplets have unequal lengths (top panel), and shorter triplets are grouped on one side, giving the PC dorsoventral asymmetry (bottom panel).
- B Many of the microtubule inner proteins (MIPs) in the pig sperm PC are not found in other mammalian centriole structures.
- C Details of the MIP densities in the pig sperm PC.

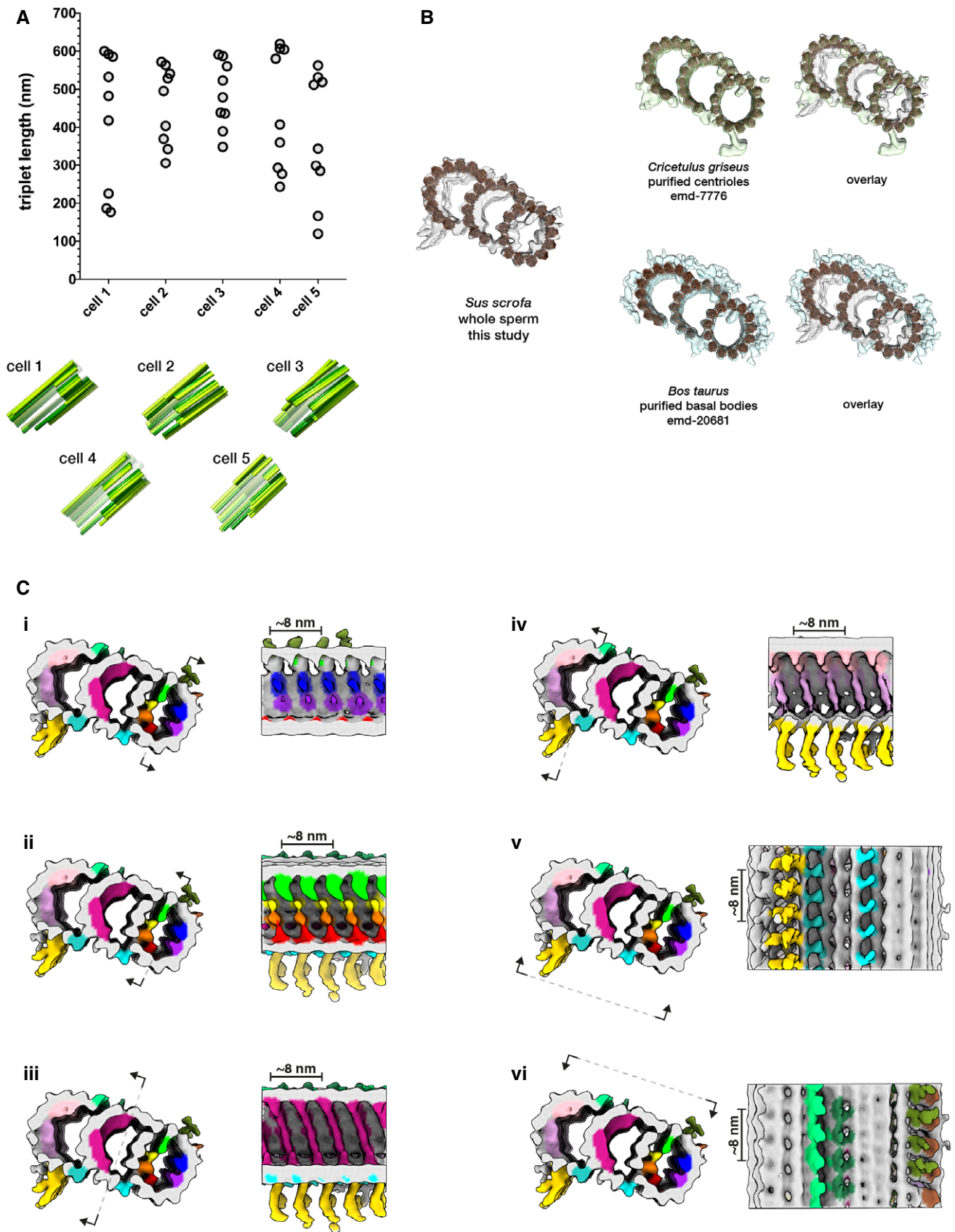


Figure EV1.

**Figure EV2. Structural details of the central pair apparatus projection network in mammalian sperm.**

A–C Whole-population *in situ* structures of the 32-nm CPA repeat from pig (A), horse (B), and mouse (C) sperm. Individual rotated views show details of C1 projections (i), C2 projections (ii), the interface between C1a and C2a projections (iii), and the interface between C1b and C2b projections (iv).

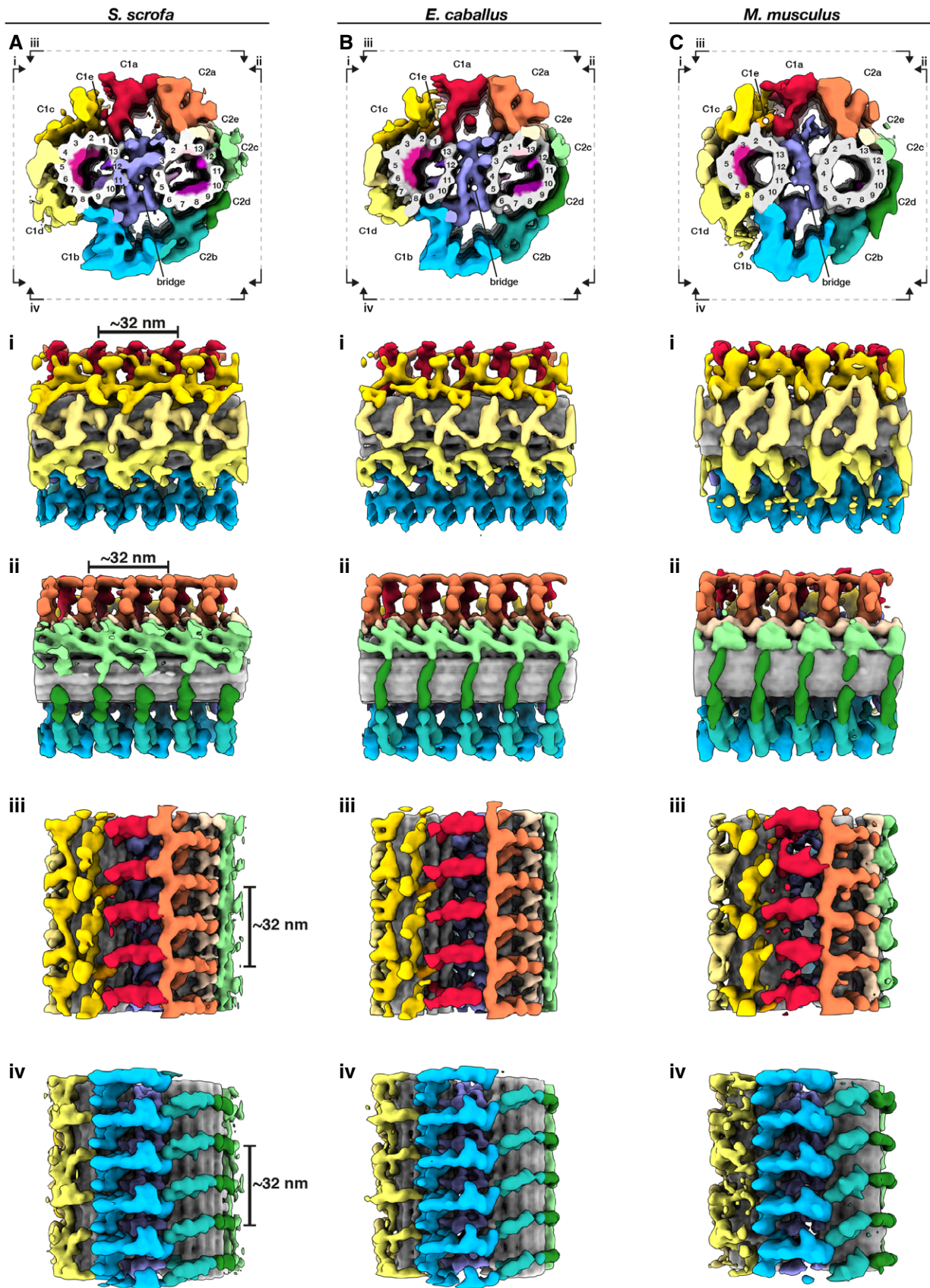


Figure EV2.

**Figure EV3. Comparing the mammalian sperm axoneme with other structures.**

A–G Structures of the 96-nm axonemal repeat from various species in cell types. Arrowheads mark the novel RS1 barrel and RS2–RS3 bridge so far seen only in mammalian sperm.

H A-tubule MIPs are present in mammalian respiratory cilia, but the A-MIP in mammalian sperm is larger and makes more extensive connections with the A-tubule itself. Scale bar: 10 nm.

Data information: Labels: ODAs—outer dynein arms, IDAs—inner dynein arms, ICLC—intermediate chain/light chain of the I1 dynein, N/DRC—nexin/dynein regulatory complex, ODF—outer dense fiber, RS1–3—radial spokes 1–3.



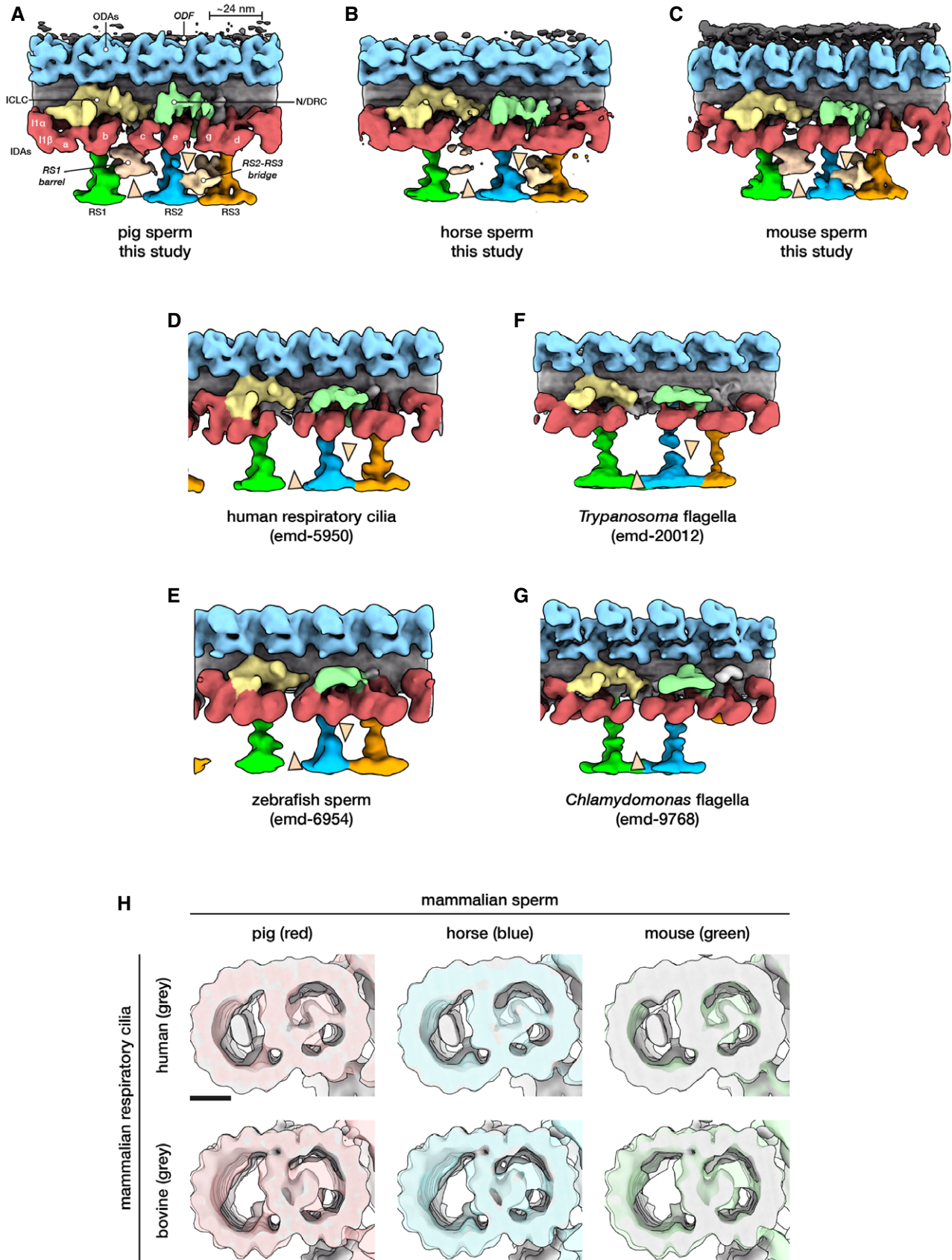


Figure EV3.