**Supplementary Figure 1.** Osteocyte centrosome without visible cillum rods. **a:** Total view of the osteocyte. **b–i:** Serial ultrathin sections across centrosome region. The mother centriole (MC) was connected with the daughter centriole (DC) by striated rootlets (SR); the mother centriole was in contact with the cell membrane (CM) and appendages (Ap) were visible in this contact zone. The lacunar cavity (Ca) between the cell body and the bone matrix (B) was big here. Scale bars: **a**, 2 μm; **b–i**, 0.5 μm.
**Supplementary Figure 2.** Osteocyte centrosome without visible cilium rods. **a:** Total view of the osteocyte. **b–j:** Serial ultrathin sections across centrosome region. The mother centriole (MC) was connected with the daughter centriole (DC) by striated rootlets (SR); the mother centriole was in contact with the cell membrane (CM), and appendages (Ap) were visible in this contact zone. The lacunar cavity (Ca) between the cell body and the bone matrix (B) was big here. Scale bars: **a,** 1 μm; **b–j,** −0.5 μm.

**Supplementary Figure 3.** Osteocyte centrosome with clearly visible cilium rods. **a:** Total view of the osteocyte. **b–h:** Serial ultrathin sections across centrosome region. The mother centriole (MC) was connected with the daughter centriole (DC) by striated rootlets (SR); the mother centriole was in contact with the cell membrane (CM), and appendages (Ap) were visible in this contact zone. The lacunar cavity (Ca) between the cell body and the bone matrix (B) was thin here. Scale bars: **a,** 2 μm; **b–h,** 0.5 μm.
Supplementary Figure 4. Osteocyte cilium connected with isolated membrane vesicle. a, b: Total views of this osteocyte with (a) daughter centriole and (b) cilium. c–f: Serial ultrathin sections across daughter centriole. g–n: Serial ultrathin sections across mother centriole and primary cilium. The mother centriole was in contact with an isolated membrane vesicle (MV); appendages (Ap) were visible in this contact zone. A short primary cilium (PC) passed into this vesicle. Scale bars: a, 1 μm; c–n, 0.5 μm.

Supplementary Figure 5. Osteocyte cilium with fine “cilium membrane prolongation.” a: Total view of the osteocyte. b–h: Serial ultrathin sections across centrosome. The mother centriole (MC) was connected with the daughter centriole (DC) by striated rootlets (SR); the mother centriole was in contact with the cell membrane (CM), and appendages (Ap) were visible in this contact zone. A short primary cilium passed into long and fine “cilium membrane prolongation” (CMP). The lacunar cavity (Ca) between the cell body and the bone matrix (B) was small here. Scale bars: a, 1 μm; b–h, 0.5 μm.