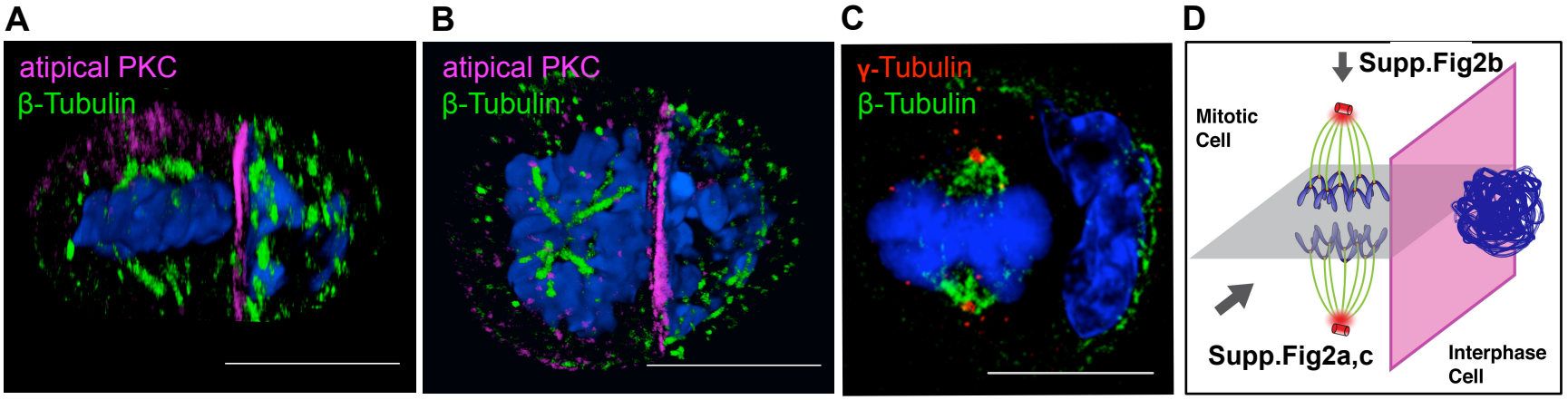
A
atipical PKC
β-Tubulin
B
atipical PKC
β-Tubulin
C
γ-Tubulin
β-Tubulin
D
Supp.Fig2b
Mitotic Cell
Supp.Fig2a,c
Interphase Cell

Supplementary Figure 2 **Primary mammary cells orient their mitotic spindle perpendicular to an apical surface as early as at the two cell stage**

(A) Localization of the apical marker atypical PKC and beta-tubulin in a dividing cell to assess the orientation of the metaphase plate/mitotic spindle towards an apical surface that is shared with the neighboring cell. 3D reconstruction of 65 confocal layers; View from the side of the metaphase spread; DAPI stain, blue; beta-tubulin staining, green; aPKC staining, magenta. Scale bar 10μm. (B) Exact same structure as shown in Fig2A. View from the bottom of the metaphase spread; DAPI stain, blue; beta-tubulin staining, green; aPKC staining, magenta. Scale bar 10μm. (C) Another example of spindle orientation during cell division in a two cell state. Localization of β-tubulin and γ-tubulin in a dividing cell to visualize the mitotic spindle orientation towards the adjacent cell; metaphase plate and spindle orientation are perpendicular to the nucleus of the other cell; projection of 20 confocal image layers (covering 4μm total) through middle of a given sphere is shown. Scale bar 10μm. (D) Graphical sketch of the metaphase plate and mitotic spindle orientation observed in a two cell state. Arrows indicate the direction of projection for Figures 2a-c.