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Supplemental information

A high-throughput electron tomography workflow reveals over-elongated centrioles in relapsed/refractory multiple myeloma

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SUPPLEMENTAL INFORMATION

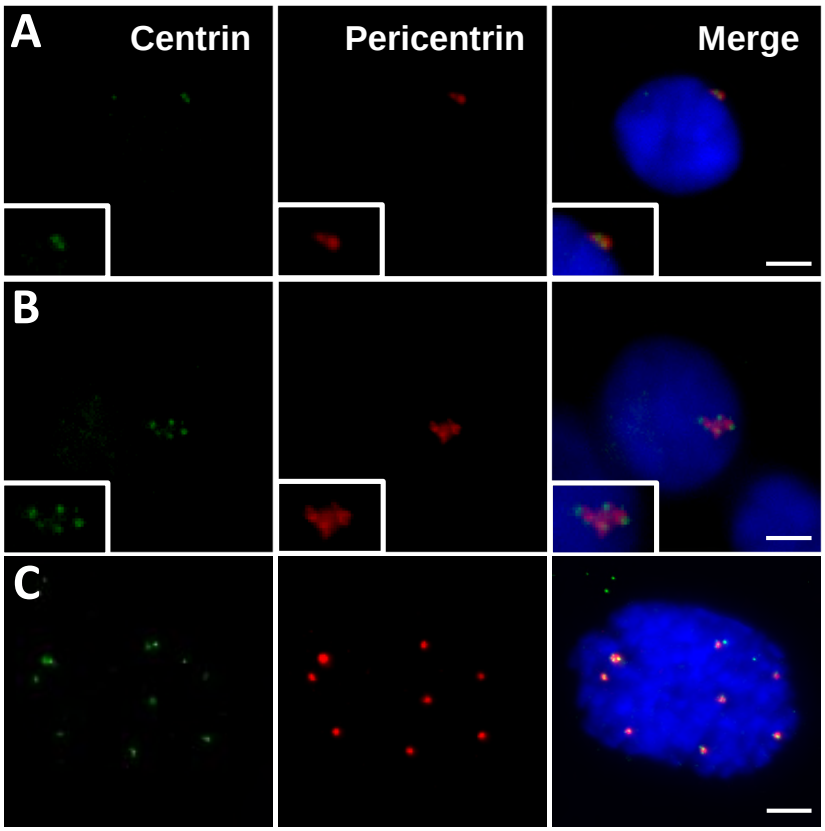

Figure S1. Related to Figure 2. Representative images of CD138^{pos} plasma cells immunostained for centrin (green) and pericentrin (red).

(A) CD138^{pos} plasma cell with a normal centriole content. (B) CD138^{pos} plasma cell with supernumerary centrioles. (C) U2OS-PLK4 cell with supernumerary centrioles 40 hours after the induction of PLK4 expression by addition of 2 µg/ml tetracycline to the cell culture medium. Centrosomes in (A) and (B) are shown enlarged in insets. DNA is stained with Hoechst (blue). Scale bars, 5 µm.

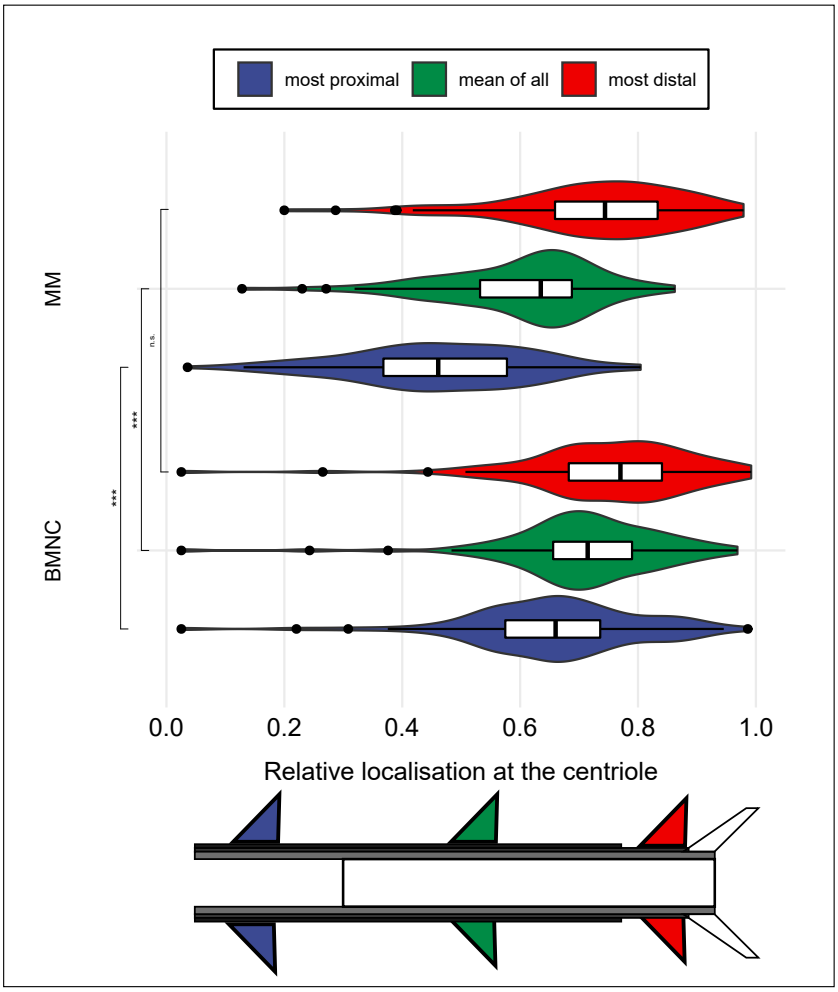

Figure S2. Related to Figure 2. Appendage localizations along centrioles.

Violin plots and integrated box plots showing the distribution of relative appendage localizations along centrioles. The relative localization ranging from 0 (proximal end) to 1 (distal end) is displayed on the x-axis and compared between $CD138^{pos}$ plasma cells from a patient with relapsed/refractory multiple myeloma (MM, 118 mother centrioles) and $CD138^{neg}$ bone marrow mononuclear cells from 3 healthy donors (pooled into one group BMNC, 98 mother centrioles). For each mother centriole, localizations of the most proximal and the most distal appendage were identified. Furthermore, the mean localization of all appendages was calculated. The Wilcoxon rank sum test was used for pairwise comparisons. ***p <0.001, n.s. not significant.

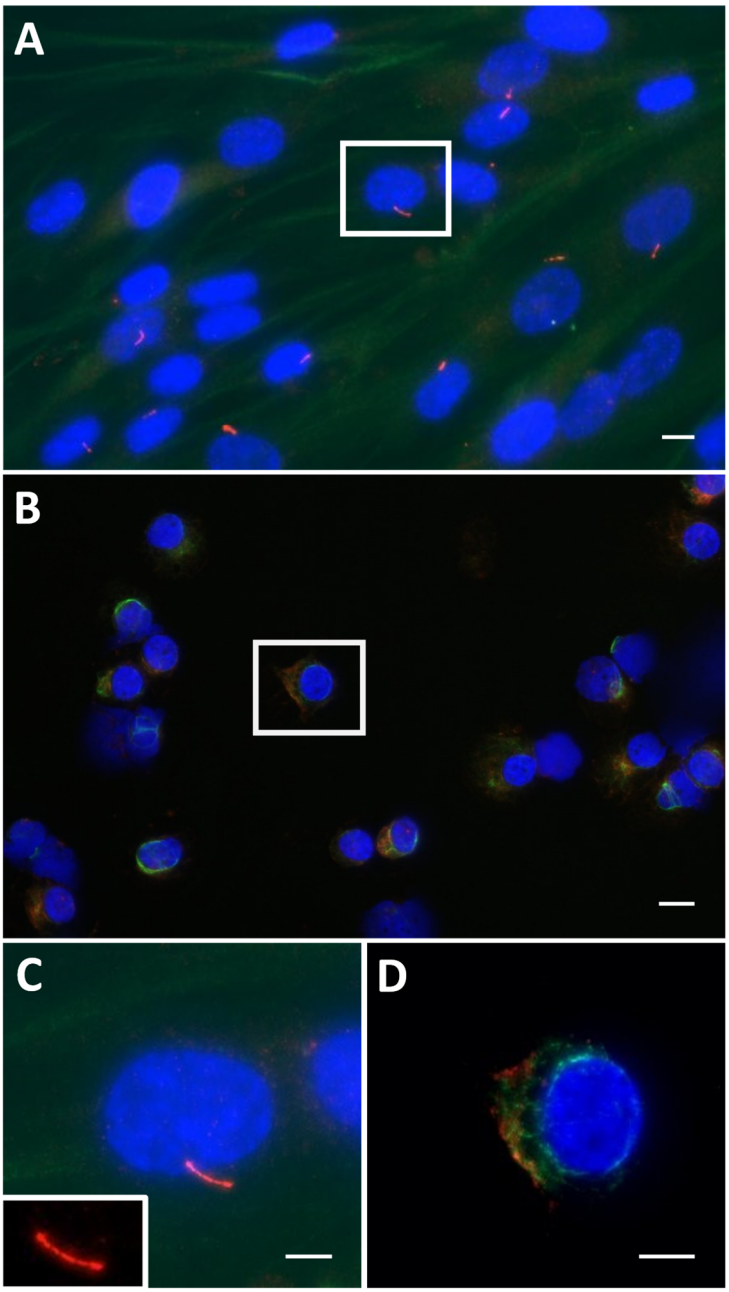
A
B
C
D

Figure S3. Related to Figure 3. Representative images of BJ fibroblasts and CD138^{pos} plasma cells and CD138^{neg} bone marrow mononuclear cells immunostained for primary cilia.

BJ fibroblasts, which were serum-starved for 48 hours prior to fixation, CD138^{pos} plasma cells and CD138^{neg} bone marrow mononuclear cells from a healthy donor were co-immunostained with antibodies against ARL13D (red) and poly-glutamylated tubulin (green). DNA was counterstained with Hoechst (blue). Primary cilia (red) were found in BJ fibroblasts (A), but not in CD138^{pos} plasma cells (B) or CD138^{neg} bone marrow mononuclear cells (C). Insets depicting an exemplary BJ fibroblast from (A), a CD138^{pos} plasma cell from (B) and a CD138^{neg} bone marrow mononuclear cell from (C) are shown enlarged in (D) to (F), respectively. The primary cilium of the BJ fibroblast is further enlarged in the inset at the bottom left corner of (D). Scale bars, 5 µm.