

Description of Additional Supplementary Files

Supplementary Movie 1: in vitro fusion 1- Representative movie of fusion event of droplets containing mEGFP- β -catWt (green), mCherry- α -cat (magenta) and E-cadcyto -mTagBFP2 (cyan). The indicated proteins were premixed at a concentration of 1 μ M before the addition of 10% PEG-8000. Time in minutes:seconds, scale bar represents 1 μ m

Supplementary Movie 2: in vitro fusion 2- Representative movie of fusion event of droplets containing mEGFP- β -catWt (green), mCherry- α -cat (magenta) and E-cadcyto -mTagBFP2 (cyan). The indicated proteins were premixed at a concentration of 1 μ M before the addition of 10% PEG-8000. Time in minutes:seconds, scale bar represents 1 μ m.

Supplementary Movie 3: HCT116 mEGFP- β -catenin z-stack high density - Representative confocal z-stack (0.2 μ m interval, looped) of endogenously tagged mEGFP- β -catenin in HCT116 cells at a confluent density. Scale bar represents 10 μ m.

Supplementary Movie 4: HCT116 mEGFP- β -catenin z-stack low density - Representative confocal z-stack (0.2 μ m interval, looped) of endogenously tagged mEGFP- β -catenin in HCT116 cells at low density, showing clusters at the free membrane. Scale bar represents 10 μ m.

Supplementary Movie 5: mESC mEGFP- β -catenin z-stack - Representative confocal z-stack (0.2 μ m interval, looped) of endogenously tagged mEGFP- β -catenin in mouse embryonic stem cells (mESCs). Scale bar represents 10 μ m.

Supplementary Movie 6: HEK293t mEGFP- β -catenin z-stack - Representative confocal z-stack (0.2 μ m interval, looped) of endogenously tagged mEGFP- β -catenin in HEK293t cells. Scale bar represents 10 μ m.

Supplementary Movie 7: HCT116 mEGFP- β -catenin fusion - Representative time-lapse imaging of endogenously tagged mEGFP- β -catenin in HCT116 cells showing the coalescence of two clusters. Time in hours:minutes:seconds; scale bar represents 1 μ m.

Supplementary Movie 8: HCT116 mEGFP- β -catenin CytoD - Representative time-lapse imaging of endogenously tagged mEGFP- β -catenin in HCT116 cells upon the addition of 2 μ g/ml Cytochalasin D. Time in hours:minutes:seconds since the addition of Cytochalasin D; scale bar represents 10 μ m.

Supplementary Movie 9: HCT116 mEGFP- β -catenin FRAP cell-cell - Representative time-lapse imaging of Fluorescent Recovery After Photobleaching (FRAP) experiment. A single mEGFP- β -catenin cluster at a cell-cell contact of endogenously tagged HCT116 cells was photobleached (area indicated with yellow box, time point 0) and imaged over time. Time in hours:minutes:seconds; scale bar represents 1 μ m.

Supplementary Movie 10: HCT116 mEGFP- β -catenin FRAP free membrane - Representative time-lapse imaging of Fluorescent Recovery After Photobleaching (FRAP) experiment. A single mEGFP- β -catenin cluster at the free membrane of endogenously tagged HCT116 cells was photobleached (area indicated with yellow box, time point 0) and imaged over time. Time in hours:minutes:seconds; scale bar represents 1 μ m.

Supplementary Movie 11: MDCK junction formation Wt - Representative time-lapse movie of normal de novo contact formation in β -catenin knock-out (KO) MDCK cells with mSc- β cateninWt addback (Fire LUT). Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m

Supplementary Movie 12: MDCK junction formation cIDR - Representative time-lapse movie showing clustering defects in β -catenin knock-out (KO) MDCK cells with mSc- β -cateninIDR* addback (Fire LUT) during de novo contact formation. Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 13: MDCK junction formation IDRs - Representative time-lapse movie demonstrating a less efficient de novo contact formation in β -catenin knock-out (KO) MDCK cells with mSc- β -cateninIDRs* addback (Fire LUT). Both novel contacts show a reduced level of β -catenin clustering and a delay in cortical enrichment, whereas the right contact fails to enrich β -catenin entirely. Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 14: MDCK junction formation nIDR - Representative time-lapse movie showing clustering defects and a failure to form a linear junction in β -catenin knock-out (KO) MDCK cells with mSc- β -cateninIDR* addback (Fire LUT) during de novo contact formation. Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 15: MDCK junction formation Wt - Representative time-lapse movie of normal de novo contact formation in β -catenin knock-out (KO) MDCK cells with mSc- β cateninWt addback (Fire LUT). Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 16: MDCK junction formation cIDR - Representative time-lapse movie showing a delay in enrichment in β -catenin knock-out (KO) MDCK cells with mSc- β -cateninIDR* addback (Fire LUT) during de novo contact formation. Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 17: MDCK junction formation no linearization - Representative time-lapse movie showing a failure to establish a linear cell-cell contact and instead maintain their dynamic protrusions in β -catenin knock-out (KO) MDCK cells with mSc- β -cateninIDR* addback (Fire LUT). Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.

Supplementary Movie 18: MDCK junction formation and breakage - Representative time-lapse movie showing an unsuccessful de novo contact formation and instead junction breakage in β -catenin knock-out (KO) MDCK cells with mSc- β catenin^{ICDR*} addback (Fire LUT). Time in hours:minutes:seconds since the initial contact formation, scalebar represents 10 μ m.