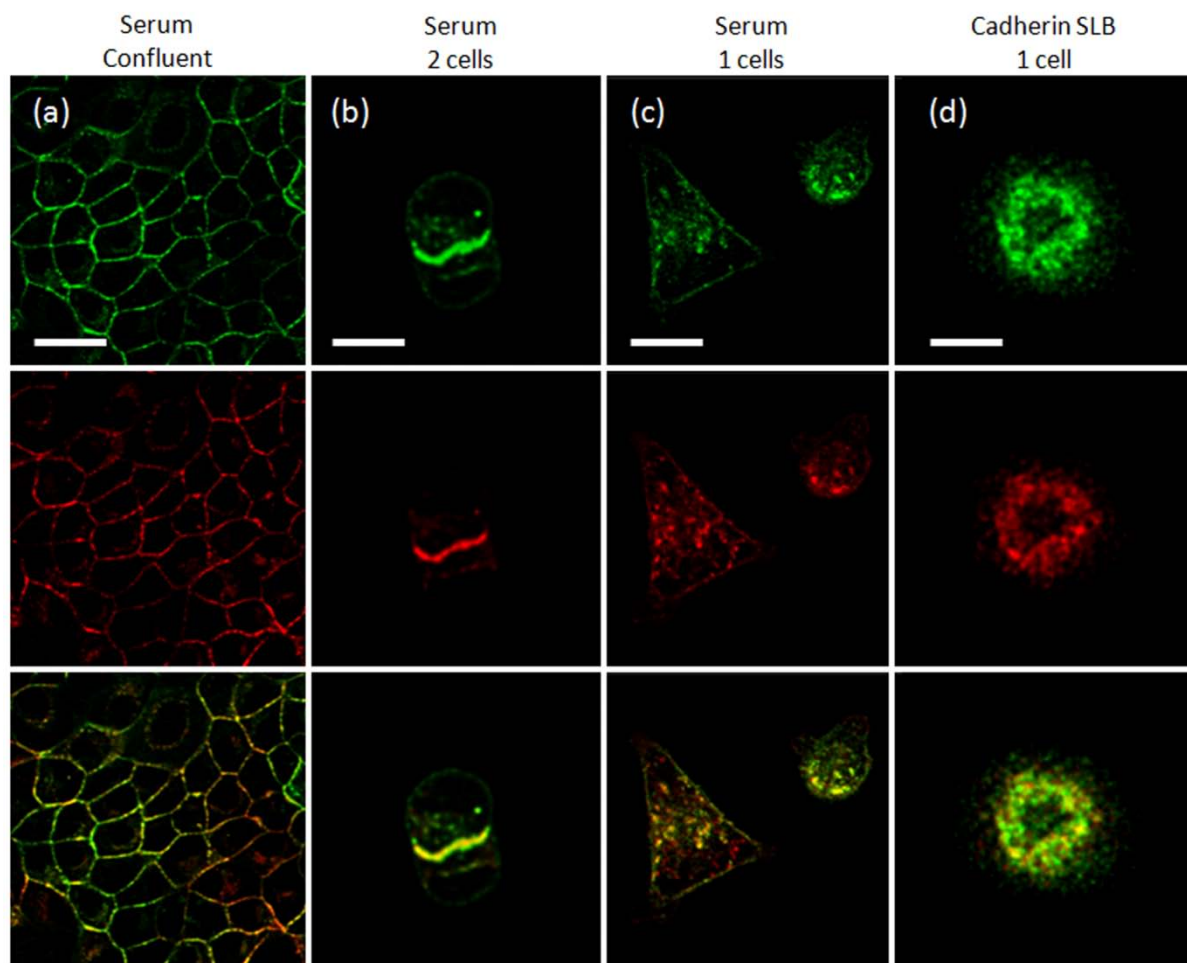
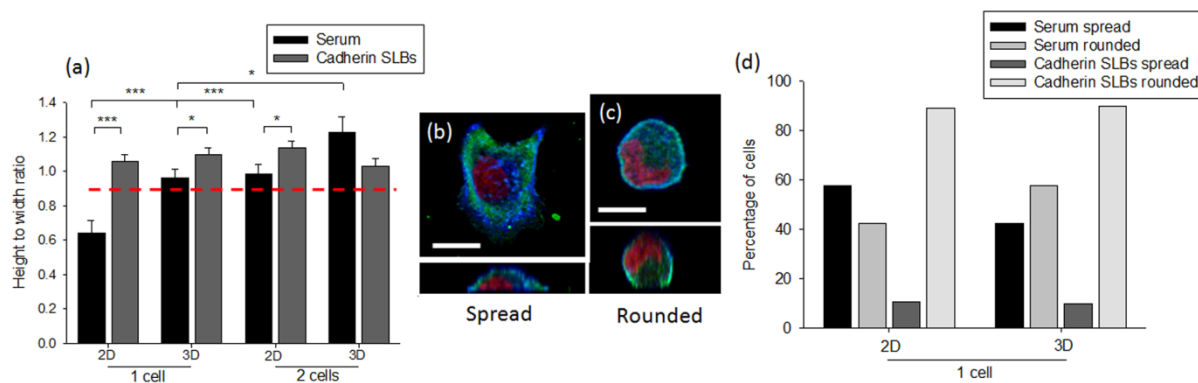


### Electronic Supplementary Information



**Supplementary figure 1:  $\beta$ -catenin colocalised with E-cadherin**

MDCK-E-cadherin cells were cultured on serum or E-cadherin/Fc functionalised SLB functionalised surfaces and the colocalisation of  $\beta$ -catenin (red) and E-cadherin (green) was assessed in (a) confluent, (b) pairs of cells and single cells cultured on either (c) serum or (d) E-cadherin/Fc functionalised SLBs. The two proteins colocalised, regardless of the number of cells present or substrate; upper row: E-cadherin-GFP, middle row:  $\beta$ -catenin, bottom row: merge of E-cadherin-GFP and  $\beta$ -catenin; bar 10  $\mu$ m.



**Supplementary figure 2: Effect of substrate coating and dimensionality on cell shape.**

(a) Cell shape was determined by measuring the height and width of the cell to calculate the height to width ratio for individual cells cultured on 2D substrates and 3D microwells coated with either serum or E-cadherin/Fc functionalised SLBs. The substrate, dimensionality of the environment and the formation of cell-cell contacts all affected cell shape. All values represent the average height/width ratio  $\pm$  SEM; a minimum of 30 cells were quantified per experiment and set up, over 4 independent experiments. Key: \*\*\*  $p < 0.001$ ; \*  $p < 0.05$ . From this analysis two morphologies were identified, (b) spread cells where the height/width was  $< 0.86$  and (c) rounded cells where the height/width was  $> 0.86$ . Images show representative images of the central xy slice of the cell and the corresponding xz slice of the same cell; stained for Na,K-ATPase (green), nucleus (red) and actin (blue); bars 10  $\mu\text{m}$ .

(d) Quantification of the percentage of cells with spread versus rounded morphologies on the different substrates tested.