#### Intercellular Adhesion Measurements with AFM

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We used an AFM to measure cell-to-cell binding between trophoblastic (human choriocarcinoma) and uterine (human adenocarcinoma) cells. A sephacryl bead with a diameter of about 60 µm glued to the AFM tip has been coated with trophoblastic cells. Thereafter, cells were brought into contact to a confluent monolayer of uterine epithelial cells. For measurements the loaded force was the same and has been hold constant in contact. The adhesion force recorded during the retraction was analyzed as a function of contact time between the cells.

The possibility to vary the contact time in the range from milliseconds to twenty minutes enables us to study the initial phase of the binding between cells. For contact times less than 100 ms an adhesion force about 2 nN occured only between the uterine cells and the non coated sephacryl surface. Contact times longer than 1 minute showed, however, increased adhesion greater than 25 nN between the trophoblastic and uterine cells due to intercellular reactions. These results suggest time-dependent communication between cells leading to increased strength of cell-to-cell contact detectable by atomic force microscopy.

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