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Roughness effect on vesicle adhesion characterised by a novel micropipette-based technique MARIE-JOSEE COLBERT, ADAM N. RAE-GEN, KARI DALNOKI-VERESS, CECILE FRADIN, Physics and Astronomy, McMaster University — Numerous biological processes have to go through a cell adhesion process, which make the fundamental study of the adhesion of cells on solid substrate a key research topic in cellular biophysics. We will present our work on the adhesion of a single vesicle on a substrate. A vesicle is held at the end of a micropipette mounted on a micromanipulator and put into contact with a surface. We developed a novel technique to directly measure adhesion using the spring-constant of an L-shaped micropipette when pulling the vesicle from the substrate. The substrate is made of a micropatterned polymer film coated with a thin layer of gold to promote adhesion with the vesicle. The effect of the surface roughness can therefore be carefully characterized.

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