

Abstract Submitted
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**Glycoprotein Mucin Molecular Brush on Cancer Cells
and its Correlation with Resistance Against Drug Delivery**

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cells is limited by the dense dendritic network of oligosaccharide mucin
chains that forms a mechanical barrier. Atomic force microscopy is used
to directly measure the force needed to pierce the mucin layer to reach
the cell surface. Measurements are analyzed by deGennes' steric reputa-
tion theory. Multi-drug resistant ovarian tumor cells shows significantly
larger penetration load compared to the wide type. A pool of pancreatic,
lung, colorectal, and breast cells are also characterized. The chemother-
apeutic agent, benzyl- α -GalNac, for inhibiting glycosylation is shown to
be effective in reducing the mechanical barrier.

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