

Abstract Submitted
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Cell-Substrate Adhesion by Amoeboid Cells¹ BRET FLANDERS, KRISHNA PANTA, Kansas State University — Amoeboid migration is a rapid ($10 \mu\text{m min}^{-1}$) mode of migration that some tumor cells exhibit. To permit such rapid movement, the adhesive contacts between the cell and the substrate must be relatively short-lived and weak. In this study, we investigate the basic adhesive character of amoeboid cells (*D. discoideum*) in contact with silanized glass substrates. We observe the initiation and spreading of the adhesive contacts that these cells establish as they settle under gravity onto the substrate and relax towards mechanical equilibrium. The use of interference reflection microscopy and cellular tethering measurements have allowed us to determine the basic adhesive properties of the cell: the membrane-medium interfacial energy; the bending modulus; the equilibrium contact angle; and the work of adhesion. We find the time scale on which settling occurs to be longer than expected. Implications of these results on adhesion and migration will be discussed.

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