Figure S2

Biophysical methodologies

Measurement of surface hardness

The nano-indentation tests were performed on Nano Indenter® XP (Nano Instruments Innovation Center, TN, USA) with a three-sided pyramid (Berkovich) diamond nano-indenter. The load and the displacement relation were recorded continuously during the loading-hold-unloading cycle. The hardness \( H \) and elastic modulus \( E \) were calculated using the equations (1) and (2), respectively.

\[
H = \frac{P_{\text{max}}}{A_c} \tag{1}
\]

\[
\frac{E}{1-\nu^2} = \frac{\sqrt{\pi}}{2} \frac{1}{\sqrt{A_c}} S \tag{2}
\]

\( P_{\text{max}} \) is the driving force, whereas \( A_c \) and \( S \) are the contact area and the materials stiffness respectively at the moment the material is in contact with the nano-indenter with the \( P_{\text{max}} \) load. \( n \) is the Poisson’s ratio and was estimated to be 0.35 for polymeric materials. The area function, which was used to calculate the contact area \( A_c \) from the contact depth \( h_c \), was carefully calibrated prior to the experiments using the standard sample, fused silica. During the nano-indentation tests, the nano-indenter was subjected to a constant strain rate of 0.05 1/s, until 2000 nm deep into the surface being probed. The load was then held at maximum value for 10 seconds before the nano-indenter was withdrawn from the surface at the same rate as that used for the initial loading. At least 30 indents were performed on each sample and the interval between two indents was maintained at 50 \( \mu \text{m} \) to avoid overlap. The indentation experiment was repeated thrice for a given surface.

Measurement of contact angles
Contact angles made by 50 µl droplets of aqueous conidial suspensions on the fresh agar blocks or the dried-agar blocks were measured following a published methodology (Nguyen et al, 2004). These contact angle measurements were used as an indicator of the hydrophilic nature of the surface and did not show any significant difference between the two surfaces mentioned above (data not shown).

References