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The role of nuclear mechanics in cell deformation under creeping flows

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Highlights

- Fully coupled fluid-solid simulation of a cell under creeping flows is performed.
- The mechanical role of the different cell parts (membrane, nucleus and cytoplasm) in the global deformation of the cell is investigated.
- The size and mechanical properties of cell nucleus slightly modifies cell deformation.
- Different mechanical environments of the cell nucleus are obtained for the different nuclear sizes and mechanical properties, which could be correlated with cell processes such as differentiation, proliferation and death.

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