Prediction of virus shape effect in simple shear flow by immersed finite element method

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ABSTRACT

Viruses have bumpy shapes [1]. The surface shape is interesting in biofluid due to their migration to targeted cell surface. In this talk, virus shape effect in simple shear flow is simulated by using immersed finite element method (IFEM) [2]. First of all, the equilibrium positions of circular particles with various characteristic parameters are computed in simple shear flow. Then, for the validation of computational model, the simulation results are compared with experimental and simulation data. By using the validated model, virus shape effect in shear flow is predicted by IFEM simulation. Finally, the simulation results of virus transport and migration on the cell surface are fully discussed for understanding cell/particle transport in fluid.

REFERENCES

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