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Accumulation of vesicles and flexible fibers in unbounded Poiseuille flow

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Dynamics of flexible fibers and vesicles in unbounded planar Poiseuille flow at the low-Reynolds-number are shown to exhibit similar basic features, when their equilibrium (moderate) aspect ratio is the same and vesicle viscosity contrast is relatively high. The lateral migration and accumulation of these two types of flexible objects is analyzed numerically and analytical scaling law for the accumulation position has been found, valid for the distances form the center of the flow significantly larger than the longest particle size.