Red blood cells can be modeled as soft deformable objects. Their shapes strongly couple to the flow. RBC clustering can compromise proper regulation of oxygen delivery to tissues and organs and it has been shown that well-organized clusters in microcapillaries tend to form. The physical origin of this cluster formation can be either long-ranged hydrodynamic interaction [1,2] or a short-range aggregation mechanism caused by plasma macromolecules [3]. How big is the relative contribution of the hydrodynamic interaction compared to the macromolecule-induced interaction on the cluster formation in a confined flow? In our research, flowing healthy red blood cells through microcapillaries at different velocities and different suspending media, the cluster formation is quantified and distinction among adhering and non-adhering clusters is done. Clustering is enhanced in suspension including macromolecules and cluster-shape differences are significant. Our 2-D numerical simulations capture the transition between the stable adhering and non adhering clusters when the flow velocity is increased.