

**Electronic Supplementary Information**

**Supplemental Movie Captions:**

Selective RBC lysis.avi:

Movie clip showing the selective RBC lysis from whole blood sample. RBCs and fluorescent labeled WBCs are flowing through the channel. During passing the mixing region, RBCs start to lyse while WBCs go through the region without apparent hurt. Background fluorescence from blood sample visualizes the mixing and only WBCs are found at downstream. Alternate imaging in dark and bright environment shows the population and position of RBCs/WBCs as well as solution mixing more clearly.

Movie is prepared in avi format.