Supporting information

Micro-rheological method for determination of blood type

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Vid. S1. Agglutinated and non-agglutinated droplets flowing through the winding channel, alternatingly.

Vid. S2. Agglutinated droplet flowing through the winding channel. The process of concentration of RBCs agglomerates in the rear of droplet is clearly visible.

Fig. S1. Differences in time of flow of droplets containing different volume fractions of the solution of antibodies.
Table S2. Average times of flow, standard deviations and multiple standard deviations for each sample type tested. The threshold value of the time of flow of droplets was calculated as the mean value of the measurements. We then calculated the spacing (s) of the mean values of time of flow for each sample from the threshold. We report the spacing normalized by the standard deviation of the measurements for each sample $s = (t_{\text{average time of flow}} - t_{\text{threshold}}) / \sigma$. Thus, the spacing gives the multiplicity of standard deviation from the threshold value and can be used to estimate the chance of an error. For the least reproducible set of data that we recorded (highlighted with the bold font in the table below) this probability is less than 1 in a million.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Average time of flow [s]</th>
<th>Standard deviation $\sigma$ [s]</th>
<th>$s$ [$\sigma$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized RBCs</td>
<td>A1 Rh-/Anty A</td>
<td>127.92614</td>
<td>0.30011</td>
</tr>
<tr>
<td></td>
<td>A1 Rh-/Anty B</td>
<td>122.53116</td>
<td>0.26723</td>
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<tr>
<td></td>
<td>B Rh-/Anty B</td>
<td>127.77471</td>
<td>0.25467</td>
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<tr>
<td></td>
<td>B Rh-/Anty A</td>
<td>122.33119</td>
<td>0.26338</td>
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<tr>
<td></td>
<td>O Rh-/Anty A</td>
<td>122.38149</td>
<td>0.27412</td>
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<tr>
<td></td>
<td>O Rh-/Anty B</td>
<td>122.56746</td>
<td>0.27369</td>
</tr>
<tr>
<td></td>
<td>O Rh-/Anty D</td>
<td>122.00516</td>
<td>0.47288</td>
</tr>
<tr>
<td>Standardized RBCs</td>
<td>A2 Rh+/Anty A</td>
<td>128.14441</td>
<td>0.53123</td>
</tr>
<tr>
<td></td>
<td>A2 Rh+/Anty D</td>
<td>128.12114</td>
<td>0.61221</td>
</tr>
<tr>
<td>Human blood</td>
<td>A1 Rh+/Anty A</td>
<td>130.95163</td>
<td>0.35307</td>
</tr>
<tr>
<td></td>
<td>A1 Rh+/Anty D</td>
<td>127.98309</td>
<td>0.34028</td>
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<td>A1 Rh+/Anty B</td>
<td>118.96828</td>
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<td>A2 Rh+/Anty A</td>
<td>128.46651</td>
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<td></td>
<td>A2 Rh+/Anty D</td>
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<td>0.26324</td>
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<td>A3 Rh+/Anty B</td>
<td>118.52507</td>
<td>0.44147</td>
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<td>O Rh-/Anty A</td>
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<td>0.28674</td>
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<tr>
<td></td>
<td>O Rh-/Anty D</td>
<td>118.91299</td>
<td>0.40499</td>
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<tr>
<td>Human blood</td>
<td>O Rh-/Anty B</td>
<td>119.1246</td>
<td>0.38397</td>
</tr>
</tbody>
</table>

$t_{\text{threshold}} : 124.038945$ s