

Erythrocyte Sedimentation Rate: A Physics-Driven Characterization in a Medical Context

Alexis Darras¹, Thomas John¹, Christian Wagner^{1,2}, Lars Kaestner^{1,3}

¹Experimental Physics, Saarland University ²Department of Physics and Materials Science, University of Luxembourg ³Theoretical Medicine and Biosciences, Saarland University

Corresponding Author

Alexis Darras
alexis.darras@uni-saarland.de

Citation

Darras, A., John, T., Wagner, C., Kaestner, L. Erythrocyte Sedimentation Rate: A Physics-Driven Characterization in a Medical Context. *J. Vis. Exp.* (193), e64502, doi:10.3791/64502 (2023).

Date Published

March 24, 2023

DOI

10.3791/64502

URL

jove.com/video/64502

Materials

Name	Company	Catalog Number	Comments
Anticoagulant (EDTA or Heparin) tube (for blood sample)	SARSTEDT	267001 or 265	Anticoagulated blood sample to characterize
Camera EOS M50	Canon	Kit EF-M18-150 IS STM	Any camera should work, provided that sector alimentation, connection to computer for automated shooting and adapted objective are available
Centrifuge	HERMLE	302.00 V03 - Z 36 HK	Requirements: at least 3000 x g ofr 7 min.
Micro-centrifuge	MLW	TH21	or any other way to determine the hematocrit
Micro-hematocrit capillaries	Fisher scientific	11884040	or other capillaries/containers for hematocrit determination
Phosphate Buffered Saline (PBS)	ThermoFisher	10010023	1x PBS, pH 7.4, 298 Osm
Pipettes (e.g. positive displacement pipette)	Gilson	FD10006	Pipette required to manipulate blood and/or packed cells. Other models are of course suitable, but be careful to treat blood and pakced cells as highly viscous fluids.
Wax sealing plate	Hirschmann	9120101	Sealing wax for the micro-hematocrit capillaries
Westergren tubes	Praxindo	A9244560	Any other standard Wetsergren tube should work too
White background with illumination	/	/	White sheet(s) of paper behind the samples, with usual room light is perfcetly sufficient.