

Störung der blutgruppenserologischen Untersuchungen durch therapeutische monoklonale Antikörper

1. Swanson JL, Issitt CH, Mann EW, Condie RM, Simmons RL, McCullough J. Resolution of red cell compatibility testing problems in patients receiving anti-lymphoblast or anti-thymocyte globulin. *Transfusion* 1984;24:141-3.
2. Enkel, S., Nowak-Harnau, S., and Bakchoul, T. Daratumumab and Isatuximab - two different treatments for patients with multiple myeloma interfering with compatibility testing for blood transfusion. *Transfusion Medicine and Hemotherapie* 2018;45:13-14.
3. Malavasi F, Deaglio S, Funaro A, Ferrero E, Horenstein AL, Ortolan E, Vaisitti T, Aydin S. Evolution and function of the ADP ribosyl cyclase/CD38 gene family in physiology and pathology. *Physiol Rev* 2008;88:841-86.
4. Zhao YJ, Lam CM, Lee HC. The membrane-bound enzyme CD38 exists in two opposing orientations. *Sci Signal* 2012;5:ra67.
5. Hardingham GE, Chawla S, Johnson CM, Bading H. Distinct functions of nuclear and cytoplasmic calcium in the control of gene expression. *Nature* 1997;385:260-5.
6. Deaglio S, Capobianco A, Bergui L, Durig J, Morabito F, Duhrsen U, Malavasi F. CD38 is a signaling molecule in B-cell chronic lymphocytic leukemia cells. *Blood* 2003;102:2146-55.
7. Morandi F, Horenstein AL, Costa F, Giuliani N, Pistoia V, Malavasi F. CD38: A Target for Immunotherapeutic Approaches in Multiple Myeloma. *Front Immunol* 2018;9:2722.
8. Oostendorp M, Lammerts van Bueren JJ, Doshi P, Khan I, Ahmadi T, Parren PW, van Solinge WW, De Vooght KM. When blood transfusion medicine becomes complicated due to interference by monoclonal antibody therapy. *Transfusion* 2015;55:1555-62.
9. Dimopoulos MA, Oriol A, Nahi H, San-Miguel J, Bahlis NJ, Usmani SZ, Rabin N, Orłowski RZ, Komarnicki M, Suzuki K, et al. Daratumumab, Lenalidomide, and Dexamethasone for Multiple Myeloma. *N Engl J Med* 2016;375:1319-31.
10. Sullivan HC, Gerner-Smidt C, Nooka AK, Arthur CM, Thompson L, Mener A, Patel SR, Yee M, Fasano RM, Josephson CD, et al. Daratumumab (anti-CD38) induces loss of CD38 on red blood cells. *Blood* 2017;129:3033-7.
11. Empfehlung zum Vorgehen bei serologischen Störungen durch den therapeutischen monoklonalen Antikörper Daratumumab (Darzalex). Stand: 01.07.2016 Sektion Immunhämatologie und Immungenetik. 2016. <https://dgti.de/service/news/stellungnahmen-der-dgti.html>.
12. Schneeweiß C, Grüger D, Heuft H-G. DaraEx verhindert Daratumumab-Interferenz im indirekten Antihumanglobulintest. *Transfusionsmedizin* 2017;7:229-32.
13. Rosner, A., Chocholi, I., and Hölig, K. First experiences with DaraEx in cross-matching red blood cell concentrates under Daratumumab therapy. *Transfus Med Hemother* 2018;45:12.
14. Leon Crottet, S., Lobsiger, S., and Hustinx, H. DaraEx: a new approach to solve the interference of Daratumumab in the indirect antiglobulin test. *Transfus Med Hemother* 2018;45:61.
15. McCudden C, Axel AE, Slaets D, Dejoie T, Clemens PL, Frans S, Bald J, Plesner T, Jacobs JF, van de Donk NW, et al. Monitoring multiple myeloma patients treated with daratumumab: teasing out monoclonal antibody interference. *Clin Chem Lab Med* 2016;54:1095-104.
16. Seltsam A, Grueger D, Blasczyk R, Flegel WA. Easy identification of antibodies to high-prevalence Scianna antigens and detection of admixed alloantibodies using soluble recombinant Scianna protein. *Transfusion* 2009;49:2090-6.
17. European Medicines Agency. Darzalex product information 2019; https://www.ema.europa.eu/documents/product-information/darzalex-epar-product-information_de.pdf.
18. Binda, M., Favoloro, V., Piel, N., Berry, J. D., and Schwind, P. Detection of masked irregular antibodies in anti-CD38 containing plasma after neutralization with a novel recombinant CD38. *Transfus Med Hemother* 2018;45:12-13.
19. Tremblay T, Baillargeon N, Chevrier M, Loubaki L. New approaches to eliminate CD38 monoclonal antibodies related interference in pre-transfusion testing. *Vox Sang* 2018;113:15.
20. Carreno-Tarragona G, Cedena T, Montejano L, Alonso R, Miras F, Valeri A, Rivero A, Lahuerta JJ, Martinez-Lopez J. Papain-treated panels are a simple method for the identification of alloantibodies in multiple myeloma patients treated with anti-CD38-based therapies. *Transfus Med* 2018.
21. Hustinx H. 2019. Persönliche Kommunikation

22. Selleng, K., Denker, P., Doshi, P., and Greinacher, A. Performance qualification of the pretransfusional antibody screening test of plasma containing Daratumumab (anti-CD 38 antibody) after DTT-treatment of the test cells using gel card and Capture® . *Transfus Med Hemother* 2017;44:57.
23. Werle, E., Ziebart, J., Wasmund, E., and Eske-Pogodda, K. Daratumumab interference in indirect antiglobulin testing is eliminated by use of daratumumab Fab-fragments. *Transfusion Medicine and Hemotherapie* 2018;45:13.
24. Schuetz C, Hoenig M, Moshous D, Weinstock C, Castelle M, Bendavid M, Shimano K, Tolbert V, Schulz AS, Dvorak CC. Daratumumab in life-threatening autoimmune hemolytic anemia following hematopoietic stem cell transplantation. *Blood Adv* 2018;2:2550-3.
25. Kaplon H, Reichert JM. Antibodies to watch in 2019. *MAbs* 2018. ePub ahead of Print
26. Advani R, Flinn I, Popplewell L, Forero A, Bartlett NL, Ghosh N, Kline J, Roschewski M, LaCasce A, Collins GP, et al. CD47 Blockade by Hu5F9-G4 and Rituximab in Non-Hodgkin's Lymphoma. *N Engl J Med* 2018;379:1711-21.
27. Velliquette RW, Aeschlimann J, Kirkegaard J, Shakarian G, Lomas-Francis C, Westhoff CM. Monoclonal anti-CD47 interference in red cell and platelet testing. *Transfusion* 2018. ePub ahead of Print