

Daratumumab

Daratumumab (Darzalex) is an anti-cancer drug. It binds to CD38,^[1] which multiple myeloma cells overexpress.^[2] Daratumumab was originally developed by Genmab, but it is now being jointly developed by Genmab along with the Johnson & Johnson subsidiary Janssen Biotech, which acquired worldwide commercialization rights to the drug from Genmab.^[3]

1 Clinical trials

Encouraging preliminary results were reported in June 2012 from a Phase 1/2 clinical trial in relapsed multiple myeloma patients.^[4] Updated trial results presented in December 2012 indicate daratumumab is continuing to show promising single-agent anti-myeloma activity.^[5] A 2015 study compared monotherapy 8 and 16 mg/kg at monthly to weekly intervals.^[2]

In November 2015, the U.S. Food and Drug Administration approved daratumumab for treatment of multiple myeloma.^{[6][7]} In May 2016 daratumumab was also conditionally approved by the European Medicines Agency for treatment of multiple myeloma.^[8]

2 Interference with blood compatibility testing

Daratumumab can also bind to CD38 present on red blood cells and interfere with routine testing for clinically significant antibodies. Patients will show a panreactive antibody panel, including a positive auto-control, which tends to mask the presence of any clinically significant antibodies. Treatment of the antibody panel cells with dithiothreitol (DTT) and repeating testing will effectively negate the binding of daratumumab to CD38 on the RBC surface; however, DTT also inactivates/destroys many antigens on the RBC surface by disrupting disulfide bonds. Fortunately, the only antigen system affected that is associated with common, clinically significant antibodies is Kell, making crossmatch testing with K-negative RBCs a reasonable alternative when urgent transfusion is indicated.^[9]

3 References

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