

Video Article

Determination of surface neutrophil CD64 with Leuko64

Michael icardi Icardi¹

¹

Correspondence to: Michael icardi Icardi at michael-icardi@uiowa.edu

URL: <http://www.jove.com/video/2907>

DOI: [doi:10.3791/2907](https://doi.org/10.3791/2907)

Keywords: CD64, Leuko64, neutrophil, flow cytometry, immunophenotype

Date Published: 6/15/2015

Citation: Icardi, M.I. Determination of surface neutrophil CD64 with Leuko64. *J. Vis. Exp.* (), e2907, doi:10.3791/2907 (2015).

Abstract

Surface expression of CD64 rapidly increases, within hours, of exposure to bacterial antigens and remains elevated as long as the stimulus persists¹. While slight elevations may be seen in some forms of autoimmune vasculitis and viral infection^{2,3}, it is largely unaffected by traumatic tissue injury and autoimmunity^{4,5}. CD64 levels are useful in evaluating patients for bacterial infection and sepsis⁶, avoiding most of the common false positives and limitations of other clinical markers like Procalcitonin and C-reactive protein. As a quantitative flow cytometric assay, CD64 determinations must be conducted with proper controls to account for lot to lot and patient variability. The Leuko 64 kit (trillium diagnostic, Maine) provides this level of control using a mixture of three monoclonal antibodies with specificities to CD64 clones 22 and 32.2 and CD163 MAC2-158 and specially calibrated beads and software to provide a normalized CD64 index (nCD64). This index removes much of the variability associated with quantitative flow cytometry assays allowing the use of an otherwise complex assay by any clinical flow cytometry laboratory comparison across platforms and kits. Here we present the procedure for measuring the nCD64 in human patients.

Disclosures

No conflicts of interest declared.