

Measuring macrophage and monocyte activation using soluble CD163 as marker

Macro163™

soluble CD163 ELISA assay



A unique product!

- Completed within 3 hours with less than 1 hour of hands-on-time.
- Maximum sample volume only 2 μ L
- Based on the two most published soluble CD163 ELISA protocols
- Standardized and quantitative
- Use of fully characterized recombinant CD163 protein as standard

Sample sources

- Serum
- Plasma
- Synovial fluid
- Cerebrospinal fluid
- Ascites
- Cell-supernatants

Possible research applications

- Detection and monitoring of macrophage activation syndromes (eg. hemophagocytic syndrome)
- Prognostic marker in sepsis and liver-disease
- Monitoring sepsis-patients by combined soluble CD163, leukocyte CD163 and CD64 expression
- Evaluation of macrophage involvement in inflammatory-, auto-immune-, and infectious diseases
- Possible involvement in atherosclerosis and cancer
- Cerebrospinal-fluid analyses for the evaluation of CNS-inflammation
- Risk-marker in low-grade inflammatory states
- Application to in vitro experiments (cell culture, tissue extracts)
- CD163 analysis in association with post-infectious recovery phase and declining inflammation
- Measurement of sCD163 in infectious disease, possibly combined with measuring CD64 expression
- Detection of myeloproliferative diseases and hemophagocytic syndrome

A co-development of IQ Products (www.iqproducts.nl) and Trillium Diagnostics (www.trilliumdx.com)

Intended use

This Macro163™ kit is intended for the quantification of soluble CD163 (sCD163) in serum or plasma samples. It is designed *for research purposes only*. The Macro163™ assay has been validated for serum and plasma measurements but can also be applied to other biological fluids like synovial fluid, ascites fluid, cerebrospinal fluid and cell-supernatants.

Background information

CD163 is a membrane protein and member of the group B Scavenger Receptor Cysteine-Rich super family specifically expressed on peripheral blood monocytes and macrophages. A particularly high expression is seen in macrophages of the 'alternative activation' phenotype playing a major role in dampening the inflammatory response and in scavenging components of damaged cells. CD163 functions as the receptor for Haptoglobin-hemoglobin complexes, and furthermore CD163 is involved in the regulation of inflammation. Macrophages play a central role in the host response to infection and tissue damage, and are furthermore important in the pathogenesis of autoimmune diseases and cancer. Historically, the presence of CD163 (by immunohistochemistry) has been associated with a post-infectious recovery phase and declining inflammation. CD163 positive macrophages constitute a major cell subpopulation in human term placenta suggesting a role for the placenta functioning as an active immunosuppressive biological barrier between mother and fetus. Importantly, the extracellular part of CD163 is cleaved from the cell-membrane by proteolytic activity upon toll-like receptor activation. This shed CD163 molecule (soluble CD163, sCD163) is detectable in body fluid compartments and is regarded to reflect activation and proliferation of macrophages in inflammatory conditions. Measurement of sCD163 may be a valuable marker in diseases with macrophage and/or monocyte involvement, such as macrophage activation syndromes (e.g. hemophagocytic syndrome), infections, liver disease, auto-immune disease, atherosclerosis and cancer. Additionally, CD163 positive macrophages constitute a major cell subpopulation in human term placenta suggesting a role for the placenta functioning as an active immunosuppressive biological barrier between mother and fetus.

Principle of the Macro163™ assay

The assay is based on the sandwich ELISA procedure. A polyclonal antibody recognizing CD163 is immobilized on the surface of the microtiterplate. After incubation with the sample or recombinant CD163 standard a second biotinylated monoclonal antibody recognizing CD163 is added. Detection of the latter is done by adding streptavidin-HRP. Use of TMB as substrate for the enzyme HRP, the amount of sCD163 protein can be quantified.

Product details			
Item	Description	Test size	Product code
Macro163™ RUO	sCD163 ELISA assay for macrophage and monocyte activation	96 tests	IQP-383

RUO - For research Use Only

Related products

CD163 antibodies (100 test per vial)			Product format and product code			
Clone	Isotype	Description	Purified	Biotin	FITC	R-PE
MAC2-158	Mo IgG1	Monocytes, macrophages	CD163-158U		CD163-158F	CD163-158P
MAC2-48	Mo IgG1	Monocytes, macrophages	CD163-48U			CD163-48P
R-20	Mo IgG1	Monocytes, macrophages	CD163-20U	CD163-20B		

Sepsis detection		Product format	Test size	Code
Leuko64™ IVD CE	Complete kit for the detection of inflammation and tissue injury by leukocyte CD64 detection	Flow cytometer version	75 tests	LK-64-75
			250 tests	LK-64-250

IVD CE For In Vitro Diagnostic use.

This product is registered as IVD in the countries belonging to the European Community

(version 040907)

