

FlowBoScan™

Most accurate detection and definition of
blood monocyte & TiMa subset.

EuroFlow
Standardize

**Consensus markers and independent
of the stage of monocyte maturation.**

PRODUCT
FlowBoScan

REFERENCE
Scan-0102

FORMAT
Liquid

SIZE
25 test



CF-Blue anti-Human HLA-DR

PerCP-Cyanine5.5 anti-Human CD14

FITC anti-Human CD64

OC-515 anti-Human CD45

PE-Cyanine7 anti-Human CD300e

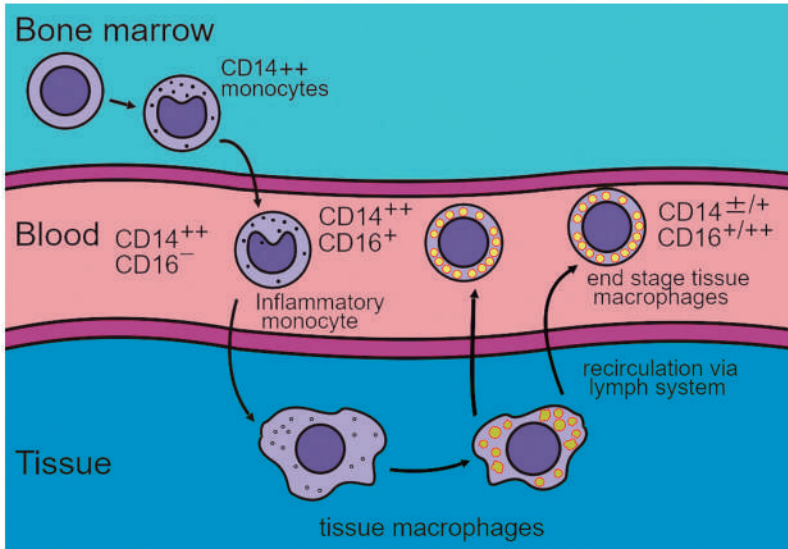
APC-C750 anti-Human CD16

FlowBoScan consists of a panel of **pre-mixed antibodies and fluorochromes** in liquid format,
including backbone markers for the **screening of different stages of monocytes and macrophages** in blood.

ADVANTAGES

- 1 Easy, fast and reliable tool
- 2 Most informative and relevant markers included
- 3 Pre-mixed combination ready to use
- 4 Minimally invasive tool for Macrophage detection
- 5 Disruptive "all-in-one" combination
- 6 Potential applications in cáncer screening and tissue homeostasis studies

> Characteristics of blood monocytes and tissue macrophages



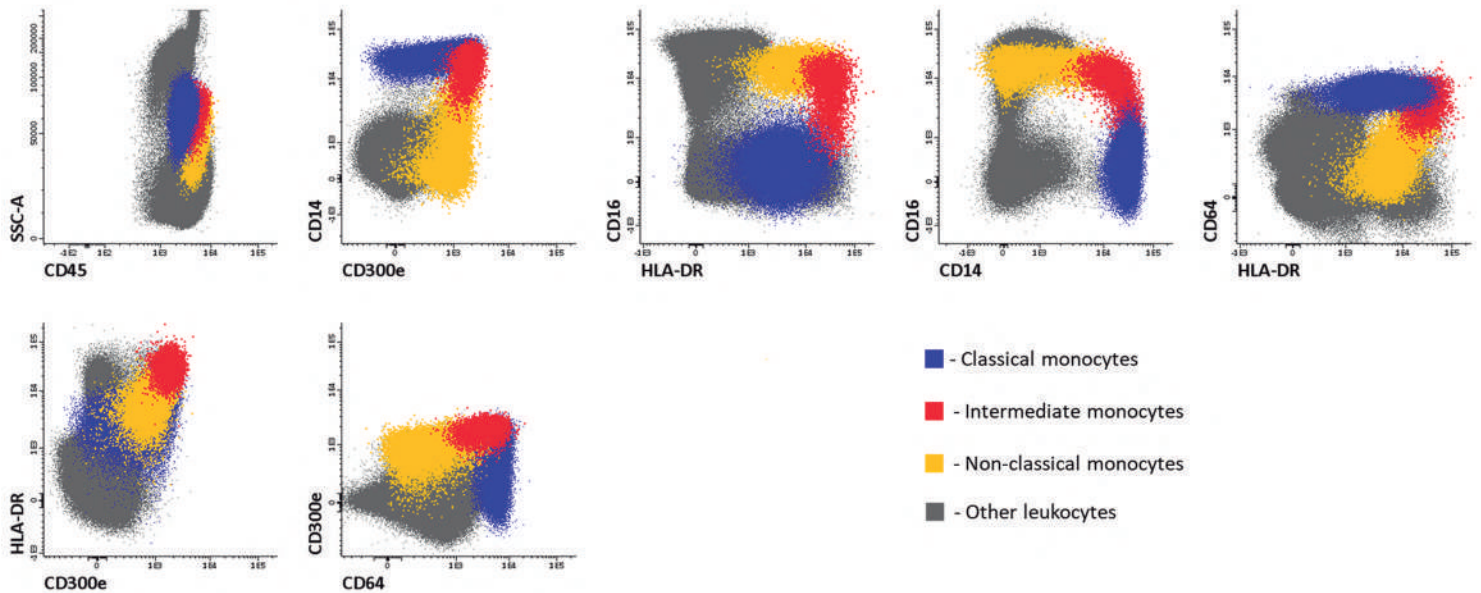
**Hypothesis by Van Dongen and Orfao*

Monocytes are produced by the bone marrow from precursors. Monocytes circulate in the bloodstream for about one to three days and then typically migrate into tissues throughout the body where they differentiate into macrophages which have the function of phagocytosing bacteria and damaged tissue.

Therefore the vast majority of monocytes (90-95%) in human blood are CD14⁺⁺/CD16⁻dim "classical monocytes", whereas macrophages in human tissues are generally CD14^{dim}/CD16^{+/++}. Interestingly, in human lymph most monocytes/macrophages (65-95%) have the "non-classical" CD14^{dim}/CD16⁺⁺ phenotype. This suggests that the small population (5-10%) of CD14^{dim}/CD16⁺⁺ "non-classical monocytes" in blood are most likely Tissue macrophages (TiMas), which have returned from their patrolling and scavenger tasks in the body tissues.

Different studies have identified changes in the absolute and relative numbers of circulating monocytes and TiMas in clinical conditions with significant tissue disruption, such as in case of inflammation, sepsis, autoimmune disease, and cancer. Therefore, accurate detection and definition of blood monocyte & TiMa subset represent a novel tool for early diagnosis and treatment monitoring in oncology and tissue homeostasis.

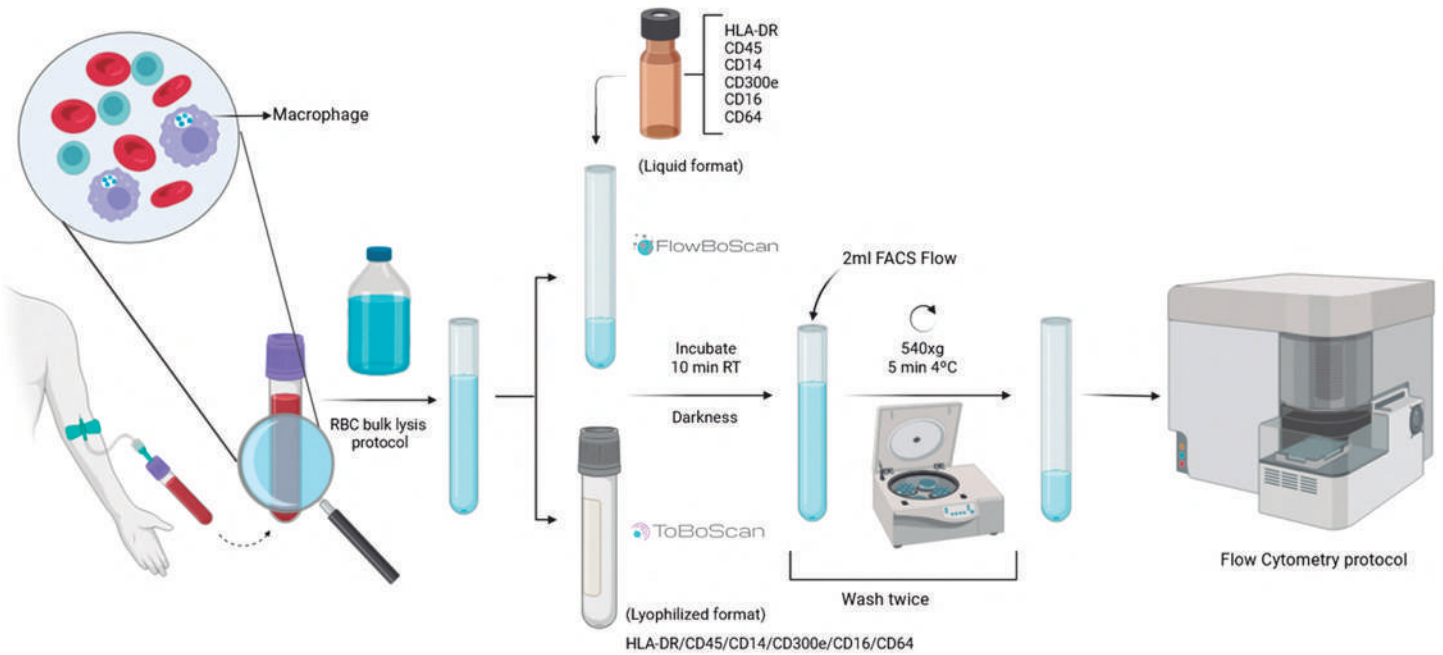
> Strategy Analysis



Accurate flowcytometric gating on CD300e and HLA-DR allows to select for all monocytes/macrophage populations in blood.

> Protocol

Bulk lysing or Lyse / Stain / Wash (LSW) protocol recommended to increase monocyte and TiMa subset concentration. In order to reach a high sensitivity > 10 million total events must be acquired.



> References

1. van den Bossche WBL, et al. Monocytes carrying GFAP detect glioma, brain metastasis and ischaemic stroke, and predict glioblastoma survival. *Brain Communications* 2020;3(1):fcaa215.
2. van den Bossche WBL, et al. Flow cytometric assessment of leukocyte kinetics for the monitoring of tissue damage. *Clinical Immunology*. 2018 Dec; 197:224-30.
3. Damasceno D, et al. Distribution of subsets of blood monocytic cells throughout life. 2019 Jul; 144(1):320-3.e6.
4. Kapellos TS, et al. Human Monocyte Subsets and Phenotypes in Major Chronic Inflammatory Diseases. *Frontiers in Immunology*. 2019 Aug. 10:2035.
5. Talati, T, et al. Monocyte subset analysis accurately distinguishes CMML from MDS and is associated with a favorable MDS prognosis. *Blood*. 2017 Mar. 129(13): 1881-3.
6. Sampath P, et al. Monocyte Subsets: Phenotypes and Function in Tuberculosis Infection. *Frontiers in Immunology*. 2018 Jul. 9:1726.

> USA Distribution



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