DIFF

DIFF APPLICATION

Know more.
Decide with confidence.
Act faster.

sysmex | Together for a better healthcare journey

Detect white blood cell abnormalities with high confidence

- ✔ 10 DIFF parameters including IG%, #
- ✔ Highly sensitive, three-dimensional flagging
- ✔ Special ‘low WBC’ mode for critically low cell counts

Keep your smear rate under control

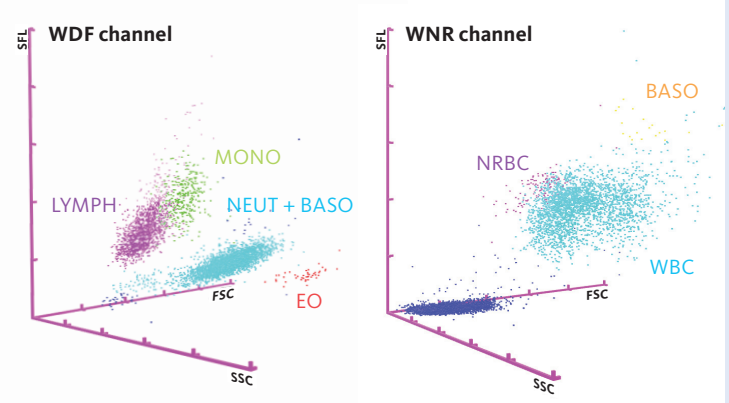
The parameter IG (immature granulocytes) already enables many of our customers to significantly reduce the number of smears by implementing individual threshold values.

Sensitively detect abnormal blood count results

The three-dimensional DIFF flagging detects white blood cell abnormalities with great sensitivity thanks to the special shape recognition of the subpopulation clusters [1], and delivers additional information to support diagnosis, e.g. for infections.

Your benefits in daily routine

- Excellent sensitivity – enabled by three-dimensional recognition of cell populations in the WDF scattergram – ensures suspected malignant and reactive cells are identified. Failing to do so would have grave implications for patients’ health and the laboratory workflow.
- Comprehensive range of parameters and messages – such as the flagging message for suspect reactive lymphocytes (‘Atypical Lympho?’) or the count of IG – that provides valuable information for the treating clinician to support the diagnosis and monitoring of infections and other reactive conditions.
- Smear rate is significantly reduced due to the availability of an IG count.
- Extended Inflammation Parameters are readily available on the routine blood laboratory test, together with the complete blood count. These characterise and quantify the activation status of neutrophil and lymphocyte subpopulations.

Diagnostic parameters	■ NEUT%, NEUT#, LYMPH%, LYMPH#, MONO%, MONO#, EO%, EO#, BASO%, BASO#, IG%, IG#
Extended Inflammation Parameters with optional licence	■ NEUT-RI, NEUT-GI, AS-LYMP%, AS-LYMP#, RE-LYMP%, RE-LYMP#
Selected research and service parameters	■ High-fluorescence lymphocyte count (HFLC%, HFLC#) ■ Lateral scattered light intensity (-x), fluorescent light intensity (-y), forward-scattered light intensity (-z) parameters and distribution width index (-WX, -WY and WZ) of neutrophils, lymphocytes and monocytes ■ RE-MONO#, RE-MONO%, RE-MONO%M
Technologies for WBC differentiation	

For references to independent publications, please visit www.sysmex-europe.com/academy/library/publications or contact your local Sysmex representative.

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Fluorescence flow cytometry	The specially developed lysis reagent initially perforates the cell membranes while leaving the cells largely intact. The fluorescence marker labels the intracellular nucleic acids (mostly RNA) in the second step. The composition of these two reagents effects a mild reaction with the blood cells so that almost all of the blood cell structure remains intact, leading to optimal separation. Cells are differentiated according to their fluorescence signal, their size and their internal structure. The intensity of the fluorescence signal is directly affected by the nucleic acid content and membrane composition of the cell. Some of the strongest fluorescence signals are shown by immature and activated cells so that these are successfully detected and can even be counted.
Adaptive cluster analysis system (ACAS)	The flexible gating algorithm does not use rigid gating areas. Instead it takes the biological variability into consideration when evaluating the measured signals. Therefore, the results are assessed individually, independently of the ethnic origin or other characteristics of the patient.
Flagging	The three-dimensional shape recognition analysis of the WBC sub-population clusters leads to a very high sensitivity for the detection of WBC abnormalities [1]. Excellent flagging performance is provided due to both the precise recognition of abnormal cell cluster shapes and the detection of abnormal cells in the respective areas of the scattergram.
Measurement modes	A WBC differential count can be obtained in the standard whole blood mode as well as in the pre-dilution mode.
‘Low WBC’ mode	In case the WBC count is low and a neutrophil count cannot be obtained, samples will be re-measured in the specific ‘Low WBC’ mode as an automatic reflex test. With an increased counting volume, the reliability of the results increases for all WBC differentiation parameters.
Further specifications Sample stability	Up to 48 hours for the differential counts

References

[1] Blomme S et al. (2021): *Int J Lab Hematol. 43(2): 191–198.*

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