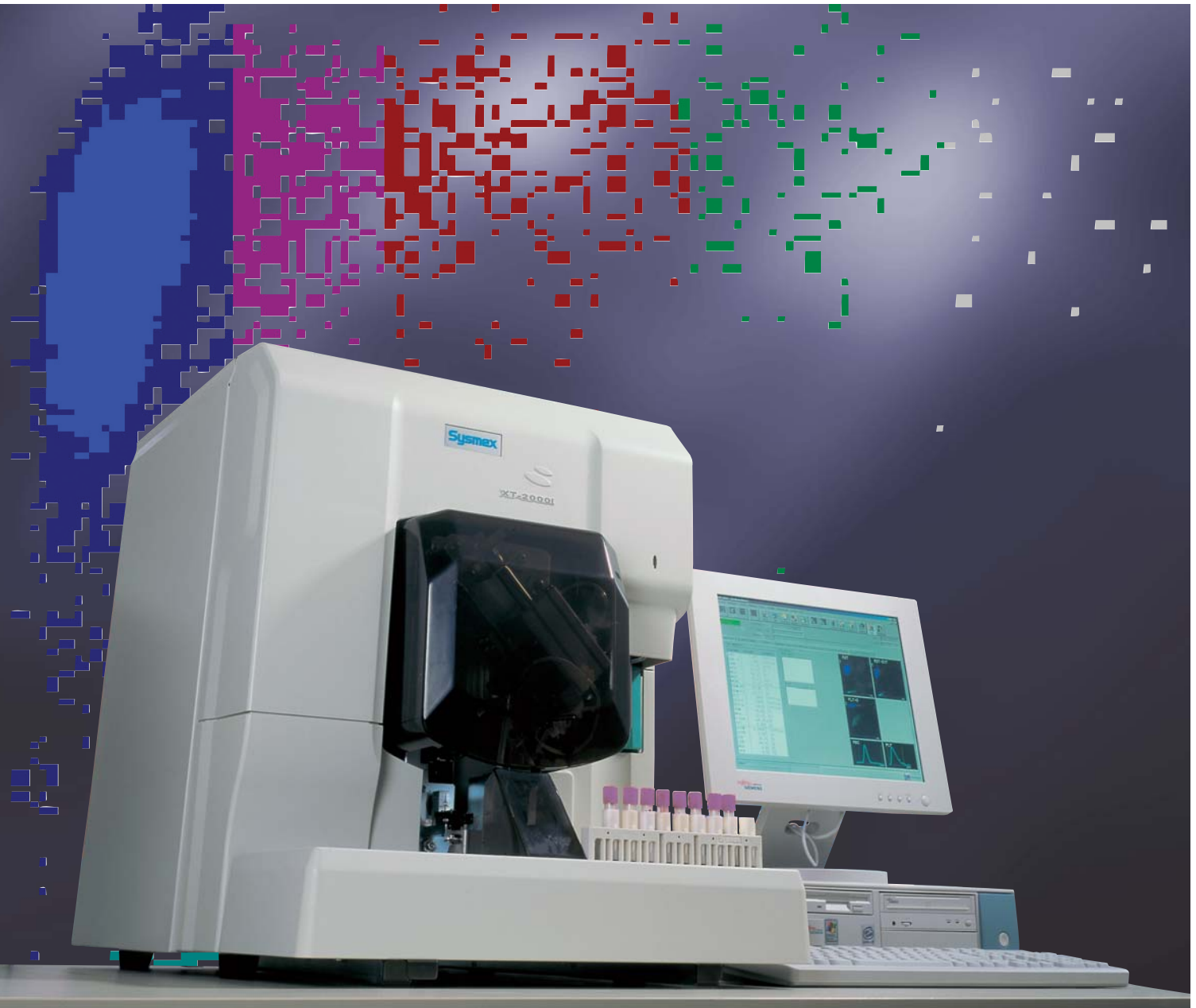


XT-2000i

The RET channel



The Sysmex “Gold Standard” methodology for automated reticulocyte analysis has been further refined to include all stages of reticulocyte maturation.

The essential importance of reticulocyte analysis in modern hematology is evident. The SYSMEX “Gold Standard” technology of the XE-2100 is incorporated into the XT-2000i to offer efficient, fast and reproducible analysis of the reticulocyte maturation stages.

Precise reticulocyte using new state-of-the-art diode laser technique

The SYSMEX proprietary fluorescent dye allows application of the diode laser technology for reticulocyte analysis. RNA and DNA of reticulated cells are specifically stained. In the flow cell each single cell passes through the beam of a semi-conductor laser. More than 30,000 cells are counted from each sample. The advanced technology allows an accurate count of reticulocytes, erythrocytes and fluorescent platelets, even in extremely low concentrations and in samples with giant platelets or red cell fragments.

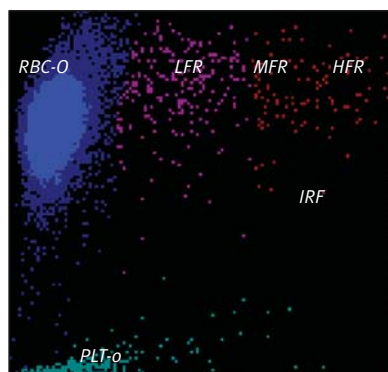


Fig. 1:
Location of immature reticulocyte fractions and PLT-o in the RET channel of XT-2000i

Due to higher fluorescent intensity of nucleated cells such as leukocytes and nucleated red blood cells or red blood cells containing Howell-Jolly Bodies, these cell types are distinctly separated from reticulocytes.

The proven longevity and low maintenance of the semi-conductor laser makes the XT-2000i a robust technology platform for reticulocyte analysis.

The maturity “stage” analysis is a reflection of hematopoietic activity in the bone marrow

In addition to an accurate reticulocyte count, the XT-2000i produces an analysis of the three natural maturation stages of reticulocytes for monitoring bone marrow activity. The RNA/DNA content of reticulocytes decreases over time until they mature into erythrocytes, which have no nucleic acid residues.

While being counted in the flow cell, the fluorescence and forward-scatter light intensity of each individual cell is measured. Information about RNA content and size of the cells is interpreted.

The XT-2000i identifies the different maturity stages according to their fluorescence. The fractions – HFR (high fluorescence ratio), MRF (middle fluorescence ratio) and LFR (low fluorescence ratio) are determined. In addition, a population of very early reticulocytes, the IRF (immature reticulocyte fraction) is analyzed (Fig.1).

IRF and the maturity stages are proven parameters in monitoring hematopoietic marrow (i.e., erythropoietic) activity. Important indications for diagnosis and therapy of anemia, and reliable information about the status for the red-cell line are provided.

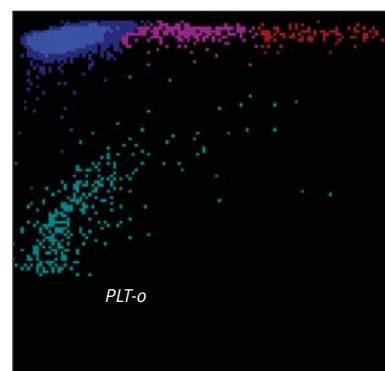


Fig. 2:
Log-scaled reticulocyte differential for optimised presentation of fluorescent thrombocytes

PLT-O- fluorescent platelets for the right decision in thrombopenic conditions

The additional measurement of the fluorescent platelets (PLT-O), along with the routinely measured reticulocytes and their stages, helps medical professionals make proper decisions concerning PLT transfusions or continuation/discontinuation of myeloablative therapy regimens, especially when PLT concentrations approach the lowest cut off (Fig. 2).