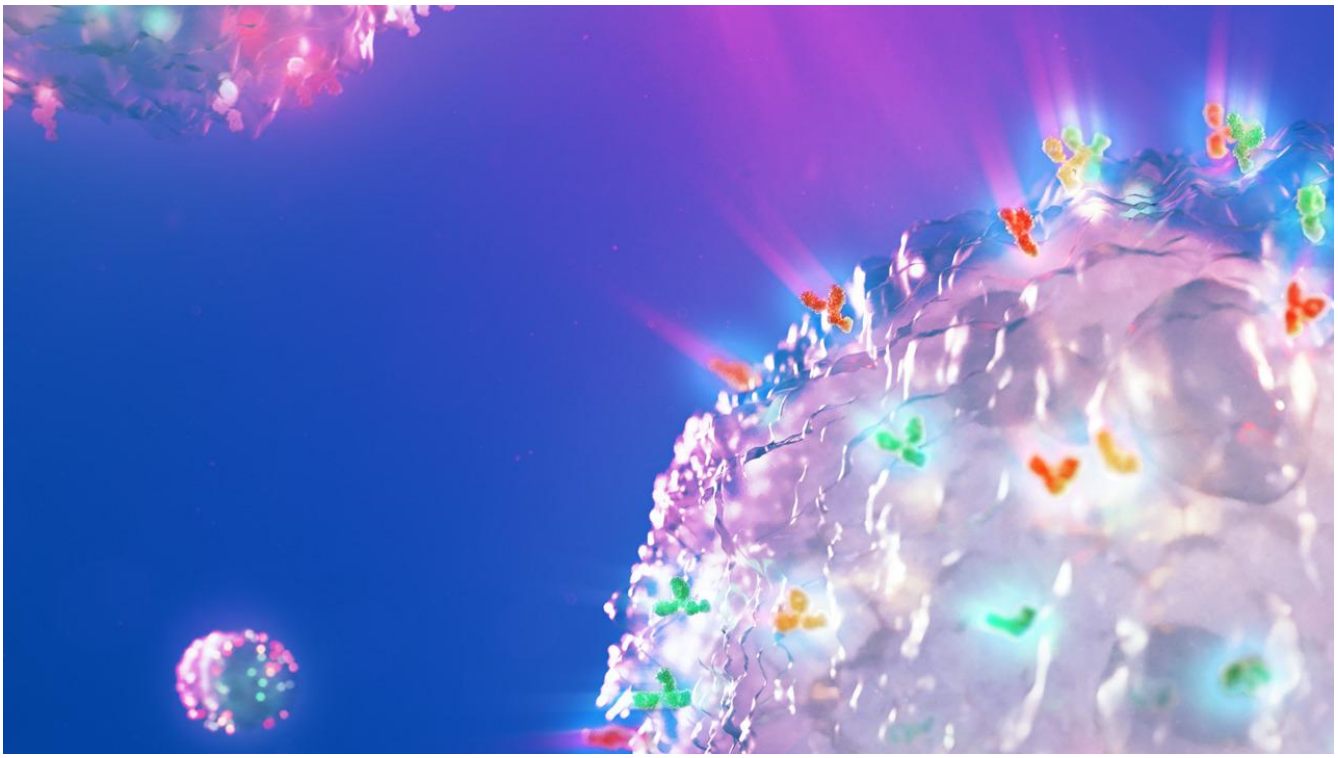

Literature List – Clinical Flow Cytometry

Customer Information

July 2026

Date: July 2026
Subject: Customer Literature List – Clinical Flow Cytometry
Issued by: Scientific Customer Services
Number: 2026-06
Note: Whether references are given in British or American English depends on the original.

NEW New entries are highlighted by this icon.

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The following list of research study publications is provided exclusively for scientific purposes.

- The studies may relate to the diagnostic use of the analytical parameters offered by Sysmex instruments. The diagnostic use is not validated by Sysmex and is therefore not in the scope of the Intended Purpose of the instruments. Details on the Intended Use can be found in the Sysmex Instructions For Use.
- Summaries of the study results are provided for convenience only and are not intended to convey any views of Sysmex on the study or the products used therein.
- Sysmex cannot be held liable for the accuracy of the study results or the summaries of the study results.
- The information provided in the literature list is intended only for health care professionals.

Peer-reviewed publications

NEW

Sevestre J, Mayeur-Rousse C, Imbert S, Harrivel V, Letestu R, Baseggio L.

Atlas d'images de cytométrie en flux : les syndromes lymphoprolifératifs – Complément d'images obtenues sur XF1600 [Flow cytometry image atlas: lymphoproliferative syndromes - Additional images obtained on the XF1600].

Ann Biol Clin (Paris). 2026 Jun 3;84(2):158-172. French. doi: 10.1684/abc.2026.2041. PMID: 42142314.

DOI of the article: JLE - Annales de Biologie Clinique - Atlas d'images de cytométrie en flux : les syndromes lymphoprolifératifs – Complément d'images obtenues sur XF1600

Online Link: [Flow cytometry image atlas: lymphoproliferative syndromes - Additional images obtained on the XF1600] - PubMed

Flow cytometry image atlas: Lymphoproliferative syndromes – Additional images obtained on the XF1600

Summary: The aim of this atlas is to present 'characteristic' flow cytometry images of the main SLP-B and SLP-T subtypes obtained using an XF1600 flow cytometer, Sysmex at Poitiers University Hospital, using routine flow cytometry panels. It serves as a supplement to previously published atlases which presented images obtained on the BD Biosciences FACS Canto II, BD Biosciences LYRIC, and Beckman Coulter NAVIOS and DxFlex.

Weir C *et al.* (2025)

Use of a Novel Flow Cytometry Platform Sysmex XF1600 in the Diagnosis of B- Cell Chronic Lymphocytic Leukaemia (B-CLL)

Biomed J Sci & Tech Res 60(5)-2025. BJSTR. MS.ID.009513.

DOI of the article http://dx.doi.org/10.26717/BJSTR.2025.60.009513

Online PDF link: https://biomedres.us/pdfs/BJSTR.MS.ID.009513.pdf

Summary: The study evaluates the Sysmex XF-1600, a 10-color flow cytometry platform, and its harmonized protocols for diagnosing B-cell chronic lymphocytic leukaemia (B-CLL). Analysis of 33 B-CLL samples across two international laboratories demonstrated that the XF-1600 consistently detected core B-CLL markers, with antigen detection rates and mean fluorescence intensity values showing statistical significance ($p < 0.05$). The harmonized Sysmex XF-1600 protocols included standardized antibody panels and instrument settings that were cloned across laboratories, thereby reducing inter-laboratory variability, and enhancing diagnostic accuracy compared to conventional laboratory-developed protocols.

Salvia R *et al.* (2024)

Clinical Utility of the XF-1600 Flow Cytometer for MRD Assessment in Multiple Myeloma.

Biomed J Sci & Tech Res 55(5)-2024.

http://dx.doi.org/10.26717/BJSTR.2024.55.008774

Summary: This study presents a standardized and a reproducible panel for MRD detection of multiple myeloma patients in the XF-1600. It shows a strong correlation between the MRD assessment in the XF-1600 versus DxFlex and Navios EX Flow Cytometers from Beckman Coulter.

Ward R *et al.* (2023)

Can Metrological Traceability for Lymphocyte Subsets be achieved: A Technical Assessment of the Sysmex XF-1600.

Int J Lab Hematol. 2023 Dec 19. doi: 10.1111/ijlh.14219. Epub ahead of print.

https://doi.org/10.1111/ijlh.14219

Summary: This study compared a bead-based technique (BD Multitest™ 6-colour TBNK assay using Trucount™ tubes on a BD FACSLyric flow cytometer) with a volumetric method on the Sysmex XF-1600 flow cytometer using Exbio Kombitest 6-colour TBNK reagent. A high degree of correlation was found for results from both methodologies and observed bias was within the limits of clinical acceptability for all populations. The authors conclude that the metrologically traceable lymphocyte subset absolute counts produced by the Sysmex XF-1600 are robust within clinically required limits.

Al-Attar *et al.* (2023)

Automation in flow cytometry: Guidelines and review of systems.

Cytometry B Clin Cytom. 2024 Jul;106(4):308-320. doi: 10.1002/cyto.b.22125. Epub 2023 May 13. PMID: 37178358.

https://doi.org/10.1002/cyto.b.22125

Summary: This article compared the Sysmex sample preparation system PS-10 with two sample preparation systems from different manufacturers: the Beckman CellMek and the BD FACSDuet.

International poster publications

Fletcher, M *et al.* (2024)

Harmonisation of Paroxysmal Nocturnal Hemoglobinuria Testing and Analysis on the Sysmex XF-1600 Flow Cytometer.Poster presentation at ESCCA 2023 conference.

Poster presentation at ESCCA 2024 conference.

https://www.sysmex-europe.com/academy/library/documents/detail/harmonisation-of-paroxysmal-nocturnal-hemoglobinuria-testing-and-analysis-on-the-sysmex-xf-1600-flow-cytometerposter-presentation-at-escca-2023-conference/

Summary: The study found that the cloning of Sysmex XF-1600 instrument settings, combined with a common panel and common analysis template, resulted in comparable results across three different sites when using stabilised PNH material tested in combination with the Exbio DryFlowEx PNH High-Sensitivity Assay Kit.

Miller, L. and Ward, R. (2024)

Assessment of Automated Gating Software on a New Volumetric Method for Lymphocyte Subsets.

Poster presentation at ESCCA 2024 conference.

https://www.sysmex-europe.com/academy/library/documents/detail/assessment-of-automated-gating-software-on-a-new-volumetric-method-for-lymphocyte-subsets/

Summary: The study evaluated the automated gating software of the Sysmex TBNK test system and concluded that the analysis software correctly identified CD3+, CD4+ and CD8+ T lymphocyte populations and gated appropriately in all of the samples tested.

Salvia R. *et al.* (2024)

Clinical Utility of the XF-1600 Flow Cytometer for MRD Assessment in Multiple Myeloma.

Poster presentation at ESCCA 2024 conference.

https://www.sysmex-europe.com/academy/library/documents/detail/clinical-utility-of-the-xf-1600-flow-cytometer-for-mrd-assessment-in-multiple-myeloma/

Summary: The authors presented a standardized panel for MRD detection in the flow cytometer XF-1600 and its comparison with two CE-IVD flow cytometers (Navios and DxFLEX from Beckman Coulter), providing evidence that the XF-1600 is a reliable and accurate instrument for measuring MRD in MM.

White, J. (2024)

CD34+ Stem cell enumeration comparison study and kit evaluation.

Poster presentation at ESCCA 2024 conference.

https://www.sysmex-europe.com/academy/library/documents/detail/cd34-stem-cell-enumeration-comparison-study-and-kit-evaluation/

Summary: This study compared the Sysmex XF-1600 using EXBIO CD34 QuantiFlowEx Kit & Spherotech SPHEROTMAccuCount Particles (49 samples) with the IVD BDTM SC Enumeration Kit (24 samples) for CD34+ stem cell enumeration. The authors concluded that the CD34+ dual platform results utilising Sysmex technologies were comparable to the BD single platform CD34+ method.

Weir C *et al.* (2023)

Evaluation of a dry monoclonal antibody lymphocyte subset kit using the XF-1600 flow cytometer.

Poster presentation at ESCCA 2023 conference.

https://www.sysmex-europe.com/fileadmin/media/f100/Business_Lines/Clinical_Flow_Cytometry/Scientific_Poster_TBNK_Dry_Tubes.pdf https://sysmexemea.sharepoint.com/sites/ExtCFCM/_layouts/15/DocIdRedir.aspx?ID=SDP--920467045-3212

Summary: In this poster, Sysmex Europe SE (SEU) evaluated the use and comparability between DryFlowEx TBNK 6-color dry tubes (DFE) tubes and KOMBITEST™ TBNK 6-color liquid cocktail (Exbio, Prague) using XF-1600 flow cytometer TBNK automated volumetric counting software. All parameter results were comparable and statistical analysis showed no significant difference.

Rico LG *et al.* (2023)

Cross-validation of standardized EuroFlow 8-color protocols on the XF-1600 flow cytometer.

Poster presentation at ESCCA 2023 conference.

https://www.sysmex-europe.com/fileadmin/media/f100/Business_Lines/Clinical_Flow_Cytometry/ESCCA2023_Euro_Flow_poster_Rico_et_al.pdf

Summary: The objective of this study was the development of a setup procedure based on EuroFlow guidelines for the XF-1600 flow cytometer to define reference fluorescence values comparable to those of a cross-calibration instrument, the Navios™ EX flow cytometer (Beckman Coulter). It could be shown that the standardized EuroFlow approach based on specific target MFIs can be used on the XF-1600.

Woodhead L *et al.* (2021)

Comparing antibody expression and staining intensity between bd FACSCanto II and Sysmex XF-1600 in follicular lymphoma progressing to B-lymphoblastic leukaemia/lymphoma.

Poster presentation at ESCCA 2021 conference.

https://www.sysmex-europe.com/fileadmin/media/f100/Business_Lines/Clinical_Flow_Cytometry/Poster-_Follicular_lymphoma_progression__Woodhead_Stevens_RHH_at_ESCCA_2021_.pdf

Summary: This poster assessed the antibody expression pattern and staining intensity (SI) between two flow cytometers; the BD FACSCanto II and the XF-1600 in a case of FL progressing to B-ALL. Both flow cytometers allowed detection of the two malignant cell populations with comparable immunophenotyping results with regards to the antigen expression pattern and staining intensity.

Williams G *et al.* (2019)

Evaluation of Sysmex Kappa and Lambda Alexa Fluor™488 Conjugated Monoclonal Antibodies for the Determination of B-Cell Surface Light Chains.

Poster presentation at ESCCA 2019 conference.

https://www.sysmex-europe.com/fileadmin/media/f100/Business_Lines/Clinical_Flow_Cytometry/Evaluation_of_Sysmex_Kappa_and_Lambda_Alexa_Fluor_TM_488_Conjugated_Monoclonal_Antibodies_for_the_Determination_of_B-Cell_Surface_Light_Chains.pdf

Summary: This poster showed that the use of the tested Sysmex AF488 monoclonal kappa antibody gave higher stain indices (SI) compared to the Dako polyclonal FITC antibody with the conclusion that it may be a suitable alternative to FITC polyclonal antibodies.

Williams G *et al.* (2019)

Evaluation of Sysmex Kappa and Lambda PE Conjugated Monoclonal Antibodies for the Determination of B-Cell Surface Light Chains. Poster presentation at ESCCA 2019 conference.

https://www.sysmex-europe.com/fileadmin/media/f100/Business_Lines/Clinical_Flow_Cytometry/Evaluation_of_Sysmex_Kappa_and_Lambda_PE_Conjugated_Monoclonal_Antibodies_for_the_Determination_of_B-Cell_Surface_Light_Chains.pdf

Summary: In this study, assessing normal and BLPD cases, Sysmex monoclonal reagents gave comparable expression patterns in terms of flow cytometric analysis to those seen with the Dako polyclonal reagent. The results demonstrated that Sysmex monoclonal reagents gave a higher stain index (SI) in the majority of all samples tested.

Sysmex calendar case

Sysmex Europe SE (2023)

Identifying a typical CLL by means of two complementary technologies.

Case report 9-2023.

https://www.sysmex-europe.com/fileadmin/media/f100/Academy/Documents/Case_report_Classic_CLL_with_two_complementary_methods.pdf

Summary: In accordance with publications, this Sysmex calendar case shows the importance of immunophenotyping to reliably identify the lymphocyte lineage in a case of B-CLL.

Sysmex Europe SE (2025)

Diagnosis of Paroxysmal Nocturnal Haemoglobinuria

Case report 02-2025.

https://www.sysmex-europe.com/academy/knowledge-centre/scientific-calendar-2025/february/

Summary: In accordance with publications, this Sysmex calendar case shows the importance of immunophenotyping to reliably support diagnosis of Paroxysmal Nocturnal Haemoglobinuria.

Sysmex Europe SE (2026)

Flow cytometry in diagnostic testing for Multiple Myeloma

Case report 03-2026.

https://www.sysmex-europe.com/academy/scientific-calendar-2026/march/

Summary: In accordance with publications, this Sysmex calendar case shows the importance of immunophenotyping to reliably support diagnosis of Multiple Myeloma.