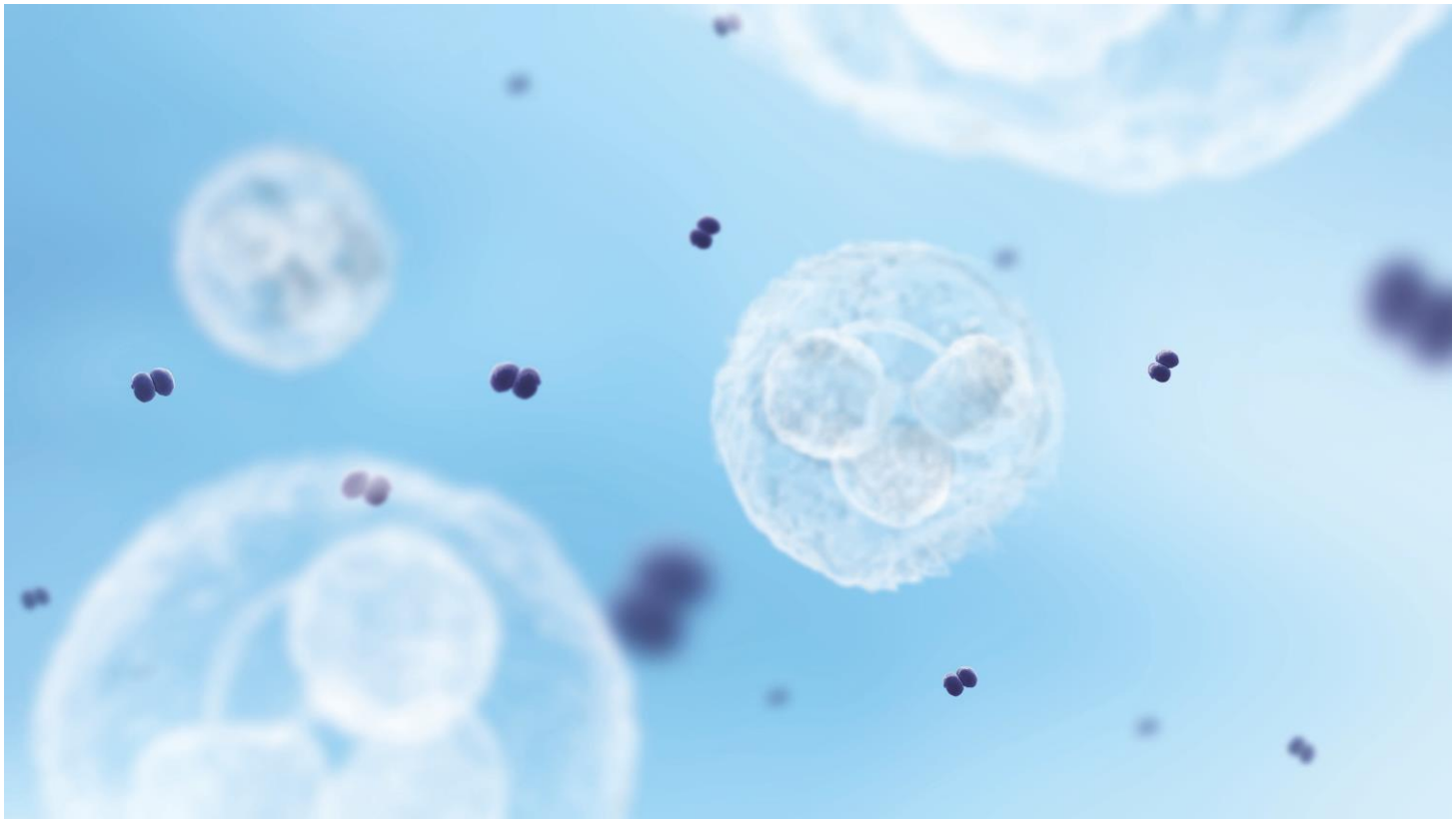
Literature List – Body Fluids

Customer Information

August 2020



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General

Seghezzi M *et al*. (2017)

Preliminary evaluation of UF-5000 Body Fluid Mode for automated cerebrospinal fluid cell counting.
Clin Chim Acta; 473:133

https://www.sciencedirect.com/science/article/pii/S0009898117303327

What we see as the essence: The present study certifies a good agreement of the UF-5000 BF mode with manual chamber count for the parameters RBC, TNC, WBC (PMN/MN). The diagnostic performance was excellent especially in samples with few cells (RBC <1,000 cells/µL, WBC <20 cells/µL) as well as low LoB, LoD, LoQ and good linearity for CSF samples.

Favresse J *et al.* (2018)

Characterization of *Candida* spp. interference on the Sysmex XN-1000 body fluid mode.
Int J Lab Hematol; 40(2):e28

http://onlinelibrary.wiley.com/doi/10.1111/ijlh.12780/abstract

What we see as the essence: The presence of yeast interferes with WBC and TC counts, and in a less extend with HF count when measuring body fluids on the XN-1000. “Therefore, the assessment of the typical “blue surfboard pattern” is also useful to identify the presence of yeast as it is important for laboratory specialists to report their presence” The absence of the flag “WBC abn Scattergram” does not proof that there are no interferences.

Cho YU *et al.* (2018)

Validation of reflex testing rules and establishment of a new workflow for body fluid cell analysis using a Sysmex XN-550 automatic hematology analyzer.
Int J Lab Hematol; 40(3):258

http://onlinelibrary.wiley.com/wol1/doi/10.1111/ijlh.12774/full

What we see as the essence: The XN-550 was evaluated for body fluid analysis and the authors conclude that the XN-550 is a suitable alternative to manual body fluid analysis. In addition, several laboratory-specific cytospin review criteria were established, resulting in significant workflow improvements.

Tanaka M *et al.* (2016)

Performance evaluation of the XN-550 Automated Hematology Analyzer body Fluid Mode — Considerations for Operational Conditions for Cell Counting with Cerebrospinal and Synovial Fluids —.
Sysmex J Int 26 (1)

Free online (after free registration)
https://members.sysmex.co.jp/me/scientific/en/sji/pdf/2016/vol26_1_03.pdf

What we see as the essence: Good performance of the body fluid mode on XN-L was found compared to manual microscopy and XN-9000 for cerebrospinal and synovial fluid samples.

Fleming C *et al.* (2015)

Clinical relevance and contemporary methods for counting blood cells in body fluids suspected of inflammatory disease.
Clin Chem Lab Med; 53(11):1689

Free online - http://www.degruyter.com/view/j/cclm.2015.53.issue-11/cclm-2014-1247/cclm-2014-1247.xml

What we see as the essence: Excellent review on body fluid analysis. Several different analysers were compared, including the XE-5000, XN-Series and UF-Series.

Cho YU *et al.* (2015)

Body fluid cellular analysis using the Sysmex XN-2000 automatic hematology analyzer: focusing on malignant samples.
Int J Lab Hematol; 37(3):346

http://onlinelibrary.wiley.com/doi/10.1111/ijlh.12292/abstract

What we see as the essence: It was found that cell counts obtained from the XN-2000 body fluid mode were comparable to counts obtained from microscopy. The authors recommend that samples with highly fluorescent cells (HF-BF) should be further analysed.

Fleming C *et al.* (2012)

Validation of the body fluid module on the new Sysmex XN-1000 for counting blood cells in cerebrospinal fluid and other body fluids.
Clin Chem Med Lab; 50:1791

http://www.degruyter.com/view/j/cclm.2012.50.issue-10/cclm-2011-0927/cclm-2011-0927.xml

Quote: "The BF module on the XN-1000 is a suitable tool for fast and accurate quantification of WBC (differential) and RBC counts in CSF and other BFs in a diagnostic setting."

De Jonge R *et al*. (2010)

Evaluation of the new body fluid mode on the Sysmex XE-5000 for counting leukocytes and erythrocytes in cerebrospinal fluid and other body fluids.
Clin Chem Lab Med; 48: 665

http://www.degruyter.com/view/j/cclm.2010.48.issue-5/cclm.2010.108/cclm.2010.108.xml?format=INT

What we see as the essence: The body fluid mode on the Sysmex XE-5000 offers rapid and accurate RBC and WBC (differential) counts in clinically relevant concentration ranges in CSF and other body fluids.

Paris A *et al.* (2010)

Performance evaluation of the body fluid mode on the platform Sysmex XE-5000 series automated hematology analyzer.
Int J Lab Hematol; 32:539

http://onlinelibrary.wiley.com/doi/10.1111/j.1751-553X.2010.01220.x/abstract

What we see as the essence: The XE-5000 count is trustworthy and can provide more precise and reliable information than the manual method using the Malassez chamber (1µL counting volume).

Riedl JA *et al*. (2010)

Automated morphological analysis of cells in body fluids by the digital microscopy system DM96.
J Clin Pathol; 63:538

http://jcp.bmj.com/content/63/6/538.abstract

What we see as the essence: The 24 h available DM96 body fluid module reliably and accurately preclassifies five main cell categories in cytospin slides with a low CV and an agreement of 90% as compared with highly trained technicians, thereby contributing to quality improvement.

Cerebrospinal Fluid (CSF)

Buoro S *et al.* (2018)

Two-site evaluation of the diagnostic performance of the Sysmex XN Body Fluid (BF) module for cell count and differential in Cerebrospinal Fluid.
Int J Lab Hematol; 40(1):26

https://onlinelibrary.wiley.com/doi/full/10.1111/ijlh.12723

What we see as the essence: The XN-BF mode provides rapid and accurate counts of cerebrospinal fluid samples in clinically relevant ranges. It was found to provide a good alternative to conventional microscopic analysis.

Fleming C *et al.* (2015)

Liposomal interference on Sysmex XN-series body fluid mode.
Clin Chem Lab Med; 54(1):e19

http://www.degruyter.com/view/j/cclm.2016.54.issue-1/cclm-2015-0441/cclm-2015-0441.xml?format=INT

What we see as the essence: Liposomal particles from DepoCyt chemotherapy treatment may be misclassified as polymorphonuclear cells by the XN-BF mode (software version 18). The authors worked together with Sysmex to develop an alert, available from software version 20 on.

Li A *et al.* (2014)

Automated white blood cell counts in cerebrospinal fluid using the body fluid mode on the platform Sysmex XE-5000.
Scand J Clin Lab Invest; 74(8):673

http://informahealthcare.com/doi/abs/10.3109/00365513.2014.939994

Quote: “In the present study, we found that the open body fluid mode of the Sysmex XE-5000 was a favourable method for determination of WBC counts and for differentiation between MNCs and PMNs, compared to manual counting.”

Zimmermann M *et al.* (2011)

Automated vs. manual cerebrospinal fluid cell counts: a work and cost analysis comparing the Sysmex XE-5000 and the Fuchs-Rosenthal manual counting chamber.
Int J Lab Hematol; 33:629

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1751-553X.2011.01339.x

What we see as the essence: Using the XE-5000 for automated counting in CSF is trustworthy especially for severely pathological cell counts, but also below. The study demonstrates specific and significant savings in terms of time and money (about 6 times).

Zur B *et al.* (2012)

Evaluation of 2 Hematology Analyzers in Body Fluid Mode versus Flow Cytometry Immunophenotyping of Mainly Neurosurgical Cerebrospinal Fluid Samples.
Cen Eur Neurosurg; 73(2):93

https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0031-1280839.pdf

Quote: "Determination of CSF cells with the XE-5000 is presently the best automated method for counting leukocytes of blood-stained CSF."

Sandhaus LM *et al.* (2010)

Automated cerebrospinal fluid cell counts using the Sysmex XE-5000: is it time for new reference ranges?
Am J Clin Pathol; 134:734

Free online: https://academic.oup.com/ajcp/article/134/5/734/1766029

What we see as the essence: The correlation between XE-5000 and Fuchs-Rosenthal chamber over the entire range of data was very good. Studies are needed to determine method-specific reference intervals for white blood cells in CSF.

Boer K *et al.* (2009)

Evaluation of the XE-5000 for the automated analysis of blood cells in cerebrospinal fluid.
Clin Biochem; 42:684

https://www.sciencedirect.com/science/article/pii/S0009912009000435?via%3Dihub

What we see as the essence: Most patients were classified correctly using the XE-5000 which is thus suitable for automated quantification of white blood cells in CSF in a defined diagnostic setting. This could significantly improve automation of CSF diagnostics.

Other Body Fluids

NEW

Wong-Arteta J *et al.* (2019)

High fluorescence cell count in pleural fluids for malignant effusion screening.
Clin Chim Acta; 499:115

https://www.sciencedirect.com/science/article/abs/pii/S0009898119320376?via%3Dihub

What we see as the essence: From the perspective of a clinical workflow the study evaluated the use of HF-BF [#] in pleural fluids for screening for malignancies. A previously published cut-off of ≥17 cells/µL for HF-BF was confirmed also considering the absence of heart failure and low respiratory infection, resulting in a sensitivity of 87% and specificity of 97%. The implementation of high fluorescence cells in the diagnostic workflow would mean earlier diagnosis and stricter follow-up of patients.

NEW

Favresse J *et al.* (2019)

Utility of the XN-1000 research mode for leukocytes counting in ascitic and pleural fluids.
Int J Lab Hematol; 42(3):e92

https://onlinelibrary.wiley.com/doi/epdf/10.1111/ijlh.13128

What we see as the essence: The study results confirm the good performance of the XN-BF mode for ascitic and pleural fluids for total cell count (TC-BF), polymorphonuclear (PMN) and mononuclear (MN) cells. Additionally, research parameters for neutrophils, lymphocytes, monocytes and high fluorescent cells have a good performance especially when malignant samples are excluded.

Xu W *et al.* (2016)

Evaluation of Sysmex XN-1000 hematology analyzer for cell count and screening of malignant cells of serous cavity effusion.
Medicine (Baltimore); 96(27):e7433

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5502180/

What we see as the essence: The analysis of serous fluid on the XN-BF mode showed good comparability with microscopy. High fluorescence cells (HF-BF) count correlated with the presence of malignant cells.

Seghezzi M *et al.* (2016)

Optimization of Cellular analysis of Synovial Fluids by optical microscopy and automated count using the Sysmex XN Body Fluid Mode.
Clin Chem Acta; 462:41

http://www.sciencedirect.com/science/article/pii/S0009898116303680

What we see as the essence: The study found that the XN-BF mode has an excellent performance, which makes it a reliable and practical alternative to optical microscopy for synovial fluids in clinical laboratories.

Buoro S *et al.* (2016)

Cell population data and reflex testing rules of cell analysis in pleural and ascitic fluids using body fluid mode on Sysmex XN-9000.
Clin Chem Acta; 452:92

https://www.sciencedirect.com/science/article/pii/S0009898115300425?via%3Dihub

What we see as the essence: Results of the study confirm that the XN-BF mode on Sysmex XN-9000 is a suitable alternative to optical microscopy for screening body fluid samples. Peritoneal and pleural fluids were analysed in the study. Authors implemented own validation rules that increased the productivity.

Bottini PV *et al.* (2015)

Comparison between automated and microscopic analysis in body fluids cytology.
Int J Lab Hematol; 37(2):e16

http://onlinelibrary.wiley.com/doi/10.1111/ijlh.12228/abstract

What we see as the essence: The authors describe a performance evaluation of the XE-5000 body fluid mode for peritoneal and serous fluids. A good correlation between the XE-5000 and microscopy was found as well as good precision and low carryover.

Labaere D *et al.* (2015)

Detection of malignant cells in serous body fluids by counting high-fluorescent cells on the Sysmex XN-2000 hematology analyzer.
Int J Lab Hematol; 37(5):715

http://onlinelibrary.wiley.com/doi/10.1111/ijlh.12393/abstract

What we see as the essence: Analysis of serous fluids on the XN-2000 showed that the absence of high fluorescence body fluid cells (HF-BF) could be used to exclude malignant samples: the negative predictive value was 92% at a cutoff of 2.1% and 95% at a cutoff of 17/µL.

Lippi G *et al.* (2013)

Evaluation of the Fully Automated Hematological Analyzer Sysmex XE-5000 for Flow Cytometric Analysis of Peritoneal Fluid.
J Lab Autom; 18(3):240

Free online: http://jla.sagepub.com/content/18/3/240.full.pdf+html

What we see as the essence: This evaluation of the XE-5000 for peritoneal fluid analysis showed excellent performance for all analysed parameters. The performance of the XE-5000 was slightly better than that of the XE-2100.

De Jonge R *et al.* (2006)

Automated analysis of pleural fluid total and differential leukocyte counts with the Sysmex XE-2100.
Clin Chem Med Lab; 44:1367

http://www.degruyter.com/view/j/cclm.2006.44.issue-11/cclm.2006.242/cclm.2006.242.xml?format=INT

What we see as the essence: With some limitations, total and differential WBC counts in pleural fluid can be reliably determined using the XE-2100.

De Jonge R *et al.* (2004)

Automated counting of white blood cells in synovial fluid.
Rheumatol; 43:170

Free online: http://rheumatology.oxfordjournals.org/content/43/2/170.full.pdf+html

What we see as the essence: The WBC count in synovial fluid using the DIFF channel of the XE-2100 can be reliably determined more precisely and faster than by manual counting. The better precision may also improve the low confidence that clinicians have in these results at present.