

Collection



Transport



Processing



Artificial Intelligence

What's Liquid-Based Microbiology?

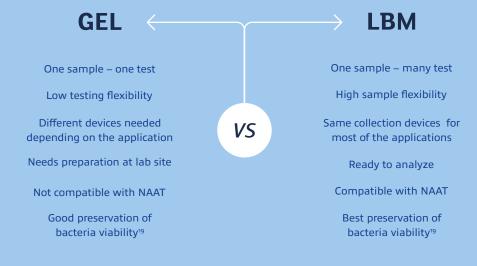
Another step toward the preanalytics revolution

If the times of semi-solid agar-based sample transport systems are long gone, it's thanks to the conception of Copan's Liquid-Based Microbiology™. Evolved from the revolutionary FLOQSwabs®, Liquid-Based Microbiology™ is today the gold standard of microbiology specimen transport that transforms specimens into easy-to-process, automatable, and multi-purpose liquid samples. Since the marketing of eSwab® back in 2006, many liquid media have been added to the LBM® family, so there are almost no clinical microbiology specimens that cannot be collected, transported, or processed in a liquid medium.

Why Liquid-Based Microbiology?

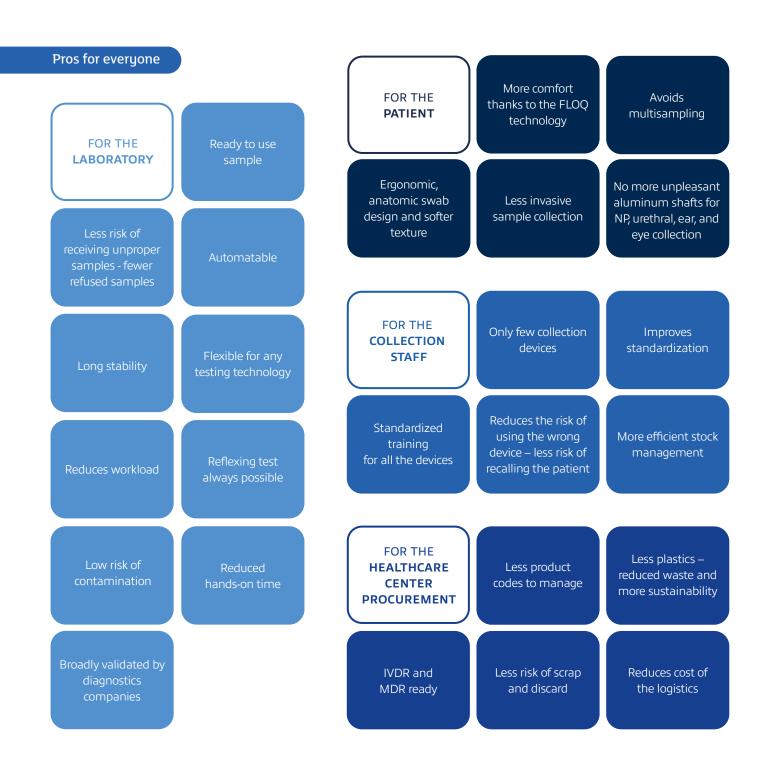
Designed to meet modern labs' needs

Contemporary clinical microbiology laboratories face significant challenges, with demands to optimize their workflow and minimize costs¹. Additionally, advances in healthcare and the COVID-19 pandemic have made it necessary for labs to incorporate molecular biology and novel diagnostic techniques into their daily routines². Not keeping pace with these changes could have serious consequences. To support these labs in improving their workflow, we developed almost two decades ago the concept Liquid-Based MicrobiologyTM as an alternative to traditional gel media.



The benefits of LBM

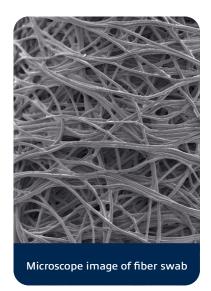
LBM's pioneer preanalytics solution – often imitated but never matched – offers numerous advantages for microbiology labs seeking top efficiency and high-quality results³. The same specimen collected with a multipurpose LBM media can be used for a broad range of applications: culture, Gram stain, antigen detection, and molecular assays. This eliminates the need for multisampling, improving patient comfort and reducing plastic waste and operational costs associated with stocking numerous collection devices and collected samples. Moreover, samples in a liquid format are easily processed on automated specimen processing instruments, reducing manual processes and workload for medical and laboratory staff and bringing standardization to the next level.



Where it all started



FLOQSwabs® is the swab that reinvented sample collection. It consists of a customizable molded plastic shaft and a tip coated with perpendicular short Nylon® fibers – applied through our patented FLOQ® technology – that ensures **a quick, capillarity-driven sample uptake and an efficient elution of the biological specimen**^{4,5,6}. All our LBM® media can be paired with FLOQSwabs® to expand your downstream testing capabilities and ensure an unmatched specimen collection in many anatomical collection sites.





EM photo courtesy of Santina Castricianob



Superior performance

Unlike other swabs, FLOQSwabs® have no internal core to trap the sample, allowing rapid adsorption and ensuring fast elution of more than 90% of the sample.



Designed for multiple collection sites

Various shaft and tip dimensions made FLOQSwabs® a well-tolerated alternative to invasive and costly collection procedures in many anatomical sites.



Multipurpose collection and transport media for traditional bacteriology culture



Copan Liquid Amies Elution Swab (eSwab®) is our multipurpose medium designed for collecting and transporting swab specimens from the collection site to the testing laboratory. eSwab® stabilizes the viability of aerobes, anaerobes, and fastidious bacteria from swab specimens for bacterial culture. Additionally, it can be used to preserve bacterial, viral, or Chlamydial antigens and nucleic acids from swab specimens for antigen and molecular testing.

Advanced stability and preservation



eSwab® stabilized the viability of all the organisms tested for 48 hours at room and refrigerated temperature⁷, except for *Neisseria gonorrhoeae* cultures, which should be processed within 24 hours. It preserves bacterial, viral, or Chlamydial antigens and nucleic acids from swab specimens for five days at room temperature, 7 days if stored at 4°C, and up to 6 months if stored at -20° C^{8,9}.

CLSI M40-A2 compliant and 510(k) cleared



eSwab® is compliant with CLSI M40-A2 Quality Control for Microbiological Transport System standards, and 510(k)-cleared by FDA.

Multiple testing capabilities



eSwab® is compatible with a broad range of downstream testing applications. Thanks to its liquid formulation, it can be used to run various tests from a single specimen, reducing the costs of multiple sampling and stocking. eSwab® is the only Amies-based transport media with an official claim for the use with NAAT, already validated and included in over 20 IFU of diagnostics molecular assays.

Scientific soundness



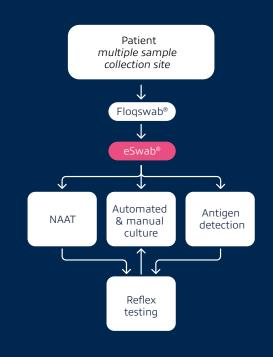
Over the past 15 years, eSwab® has been cited in more than 120 peer-reviewed papers – striking results compared to the three scientific citations of the leading competitor.

Versatile



eSwab® is available in combination with different swab geometry to fit any collection site and as an MRSA collection kit, in combination with 2 or 3 swabs for this specific application.





Collection, transport & preservation device for enteric pathogens



FecalSwab® is a modified Cary-Blair medium designed to stabilize enteric pathogenic bacteria's viability during transport to the testing laboratory. It features higher preserving properties at different storage conditions than traditional media and dry containers, and it is validated **for bacterial culture10 and molecular-based assays**^{11,12,13}. Compatible with both stool and rectal swabs, FecalSwab® is available with a standard FLOQSwabs® and a specialized FLOQSwabs® with a stopper to collect anal, perianal samples, and feces.



The right device for the evolving GI diagnostics

FecalSwab® perfectly matches the need of an evolving GI diagnostics landscape. From culture to NAAT, its flexibility allows FecalSwab® to be used in any testing workflow, with the possibility of having enough high-quality samples for reflex or backup testing.



Sample stability

FecalSwab® preserves collected specimens for 48h at room temperature or 72h at refrigerated temperature. In the case of C. difficile culture investigation, Copan FecalSwab® stabilizes collected specimens for up to 24h at room temperature and 48h at refrigerated temperature.



${\it Enhanced shelf-life and simplified transport}$

FecalSwab® VI-PAK metallic foil and plastic film barrier block oxygen entry, preventing unwanted oxidation of the transport medium. In addition, its shatterproof tubes are a compact and neat alternative to large, bulky transport containers.



Rectal and stool sampling

Fecalswab® can be used by medical staff to transfer a small amount of sample from the primary stool collection container or to collect a rectal swab sample directly.



CLSI M40-A2 Compliant

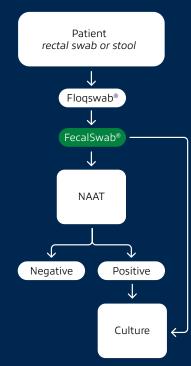
FecalSwab® is compliant with CLSI M40-A2 Quality Control for Microbiological Transport System standards.



FDA 510(k) cleared for both culture and NAAT

FecalSwab® is FDA 510(k) cleared for bacterial culture application as well as for use as a transport system for molecular testing with BD Max Enteric panel and Extended Enteric panel. It is also included in numerous IFU of GI panel assays.





Universal medium

for collection, transport, and preservation of viruses



UTM® is our Hanks' Balanced Salt Solution, suitable for the **collection, transport, and long-term freeze storage of viruses, chlamydia, mycoplasma, and ureaplasma**. UTM® is compatible with viral culture, antigen detection¹⁴, and molecular assays¹⁵.



Enhanced stability

UTM® HBSS's unique formulation includes proteins, sugars, and a pH indicator to preserve viral viability for 48 hours at room temperature. In addition, its antibiotics and antimycotics prevent the overgrowth of bacterial and fungal flora.



Convenient format

UTM® capture-cap – to dock and secure the swab shaft for easier tube handling – skirted, shatterproof conical tubes, and multiple (1 - 10 mL) fill volumes ensure safe handling and versatility.



Glass beads

Three glass beads in each tube facilitate the release and dispersion of patient material and virus particles from the swab during vortexing.



CLSI M40-A2 Compliant

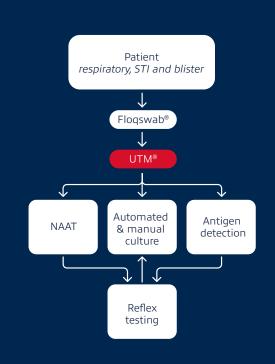
 $\label{eq:compliant} \mbox{ UTM} \mbox{$^{\$}$ is compliant with CLSI M40-A2 Quality Control for Microbiological Transport System standards.}$



Virology Gold standard

Over 50 virology diagnostic tests included UTM® as the preferred sample transport media.





Sputum-liquifying device for respiratory tract pathogens



SLsolution™ (Sputum Liquefying solution) is a ready-to-use mucolytic agent for the rapid liquefaction of sputum specimens¹6. SLSolution™ can be used before the plating and streaking of fungi and bacteria (*Mycobacteria spp*. Excluded) that cause respiratory tract infections without affecting their vitality and morphology.



Quick fluidification

Effective sputum fluidification after 30 minutes at room temperature. SLSolution™ has been tested and validated for liquefying sputum samples prior to culturing for the isolation of bacteria and fungi without affecting the morphology, growth, or microscopic staining and appearance of pathogens.



Simplified fluidification phase

SLsolution™ is available in bulk, in a kit with a single-use transfer pipette, or a kit with the Sputum Dipper. The combination of SLSolution™ with the Sputum Dipper – our tool designed to ease the processing of sputum samples – helps to eliminate issues caused by viscous samples.



No rehydration needed

No need for rehydration of powder or dilution of liquid concentrate. SLSolution™ is ready to be mixed with your sample.



Preservation and shelf-life

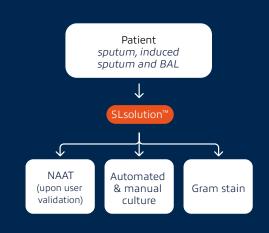
SLsolution™ comes with a shelf-life of 12 months at room temperature. Preservation of microorganisms is guaranteed for up to 6 hours at room temperature.



Convenient

With SLSolution™, you can avoid the costs and waste of making your own reagents for liquifying sputum.





Liquid-Based Microbiology™ broths for every need



Among transport and processing media, the Copan LBM® family includes a **full range of enrichment and selective broths** for the most common aerobic and anaerobic bacteria. All of them are stable at room temperature, don't need pretreatment and preparation, and their screw cap tube format fits most laboratory equipment.





Selenite Broth™

Selenite BrothTM is a selective and enrichment broth for Salmonella enterica spp and Shigella sonnei. It is compatible with both Classic stool samples and FecalSwab® samples.



$\textit{TSB Salt Enrichment Broth}^{\text{\tiny{TM}}}$

TSB Salt™ is a medium specifically intended for the isolation of *S. aureus spp.* After incubation, TSB Salt Broth™ is intended to enrich a specimen suitable for subculture on selective MRSA agar plates.



BHI (Brain Heart Infusion) Enrichment Broth™

BHI broth™ is a medium specifically intended for fastidious bacteria, including *Streptococcus pneumoniae* and *Staphylococcus aureus*.



LIM Enrichment Broth™

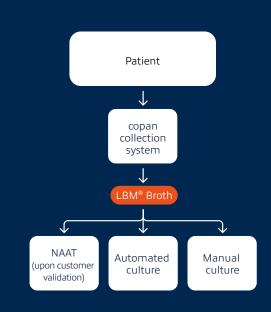
The LIM medium™ is a modification of Todd Hewitt Broth and is specifically intended to isolate and enrich Group B Streptococcus.



Thiol Broth™

Thiol medium™ is a universal enrichment broth for anaerobic bacteria and obligatory microorganisms. Its tube is also designed to enable turbidity check for strict anaerobes after 24h.





A real-life experience

Read Prof. Carla Fontana's real-life experience in switching from gel-based to liquid media.

"In our laboratory, we adopted the LBM system in 2008 and used it for a variety of tests, including culture, Gram staining, and many molecular assays. [...] The Copan LBM device family has allowed us to optimize the workflow in the laboratory, especially for its suitability for a variety of testing methods, [...] Our findings demonstrate the appreciable changes in the workflow and, of course, the advantages due to the LBM introduction. Unification of collection systems can reduce manual processing and determine the standardization of procedures. All of these are basic stages that microbiologists must prepare to accept and introduce in the laboratory for good microbiological practice and the benefit of the patient. The real challenge for the microbiologists, in the next years, is the ability to catch the novelties and to introduce them in the diagnostic process also by adapting and connecting them to several different technologies. We believe that our work is an example of this process of changing."³

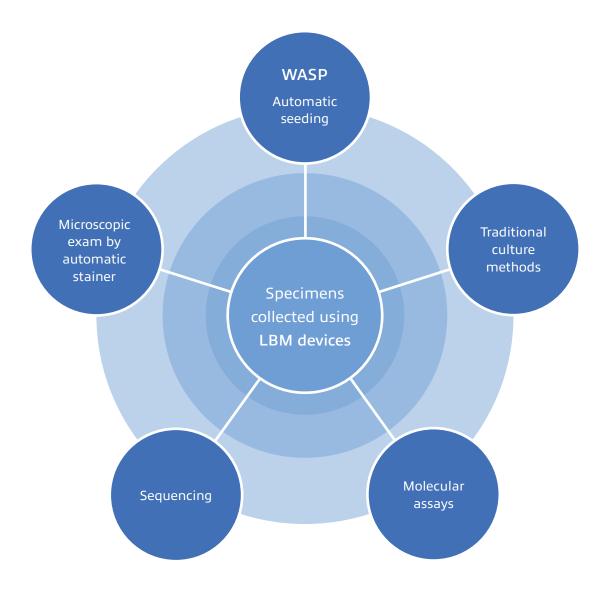


Figure 1. Central role of LBM devices in a multidirectional and multi-tasking laboratory.



WASP

Gone liquid? Go automated.

Compared to gel media, liquid media can be easily processed on automated specimen processors and liquid handling systems, minimizing manual touchpoints for reduced human error, unparalleled precision, and improved standardization. All Copan LBM® tubes are designed explicitly to be loaded and processed by our Walk-Away Specimen Processor WASP for bacteriology application and Universe for molecular biology sample preparation.

Full Lab Automation

And it's just the beginning!

WASP® is just your first step into microbiology automation. Copan's WASPLab® preanalytical Full Lab Automation ecosystem begins at the streaking phase and – combining hardware modules with integrated image analysis software and Artificial Intelligence – takes care of reading, interpreting, and picking activities^{17,18}.





Service

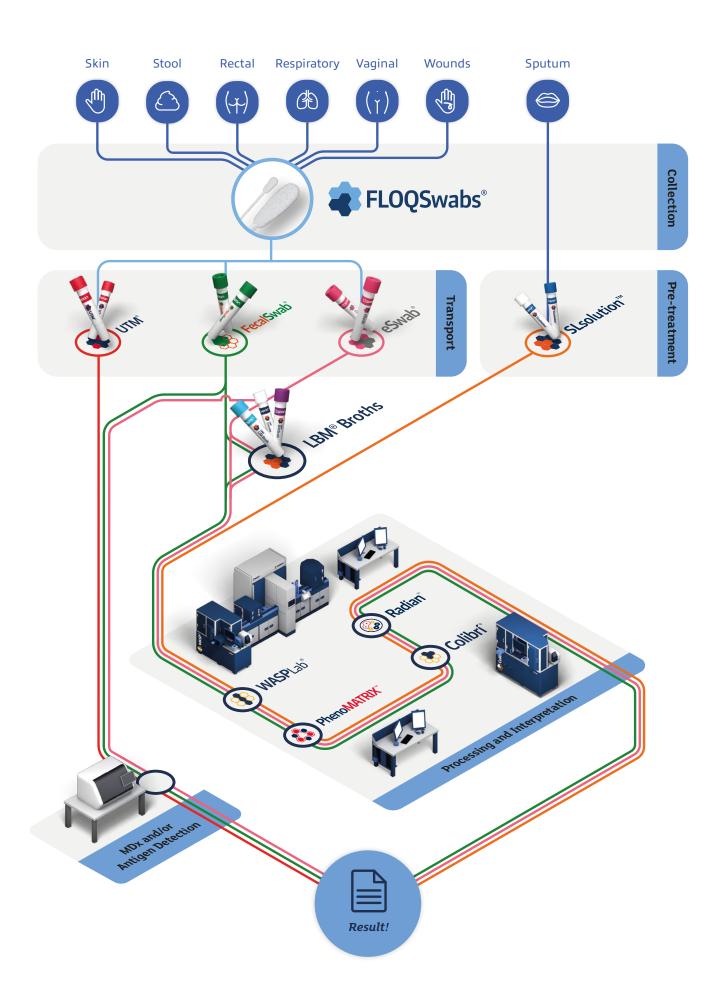
Make the first move



Ready to switch to better Microbiology?

We provide hands-on expertise to facilitate new product implementation. Moreover, our in-house R&D, design, and manufacture guarantee prompt fine-tuning, service, and customization of your whole preanalytics workflow.

Contact us, and we'll discuss to assist with training, guidance, and more!



This picture is meant only for flow demonstration purposes and the data reported are not intended to replace the Instructions for Use (IFU) Always refer to the IFU for the final application compatibility or refer to a Copan representative.

For molecular and antigen detection applications refer to the device's manufacturer IFU for final compatibility

Below you can find a selection of the best-selling formats of our Liquid-Based Microbiology media. For the complete list of product codes, please consult our website, or contact us.

Ordering information eSwab®





Ordering information FecalSwab®

Cat N.	Description	Pack size	Sample*
470CE	FecalSwab® for manual use, 12x80mm tube filled with 2 ml Modified Cary Blair medium + 1 regular FLOQSwabs®	500 pieces 10 vipaks of 50 pieces	Stool container, rectal
4E048S	FecalSwab® for manual use, 12x80 mm tube filled with 2 ml of Modified Cary Blair medium + 1 regular FLOQSwabs® with stopper	500 pieces 10 vipaks of 50 pieces	Stool container, rectal
4Uo31S	12x8omm tube filled with 2 ml Modified Cary Blair medium + regual FLOQSwabs®	300 pieces 6 boxes with 50 tubes + 1 resealable pack of 50 stool transfer devices	Stool container

Ordering information UTM®

Cat N.	Description	Pack size	Sample*
305C	16x100mm tube filled with 3ml UTM® medium + 1 flexible minitip FLOQSwabs® with molded breaking point	500 pieces 10 vipaks of 50 pieces	Eye, ear, nasal passages, nasopharynx, throat, urogenital tracts and pediatric sites
307C	16x100mm tube filled with 3ml UTM® medium + 1 minitip FLOQSwabs® with molded breaking point WYM-0F property to the property t	300 pieces (6 boxes of 50 kits)	Eye, ear, nasal passages, nasopharynx, throat, urogenital tracts and pediatric sites
359C	12x8omm tube filled with 1ml UTM® medium + 1 regular FLOQSwabs® with molded breaking point	300 pieces (6 boxes of 50 kits)	Nose, throat, vagina, rectum, faeces and wounds
36oC	12x80mm tube filled with 1ml UTM® medium + 1 flexible minitip FLOQSwabs® with molded breaking point	300 pieces (6 boxes of 50 kits)	Eye, ear, nasal passages, nasopharynx, throat, urogenital tracts and pediatric sites
33oC	16x100mm tube filled with 3ml UTM® medium + 1 flexible minitip FLOQSwabs® with molded breaking point UTM-RT transport medium for: Viruses, Chlamydia, Mycoplasma & Ureaplasma	500 pieces 10 vipaks of 50 pieces	Eye, ear, nasal passages, nasopharynx, throat, urogenital tracts and pediatric sites
35oC	16x100mm tube filled with 3ml UTM® medium + 1 minitip FLOQSwabs® with molded breaking point UTM-RT MINII transport medium for Vinses, Chlamydia, Mycoplasma & Utepslasma News	300 pieces (6 boxes of 50 kits)	Eye, ear, nasal passages, nasopharynx, throat, urogenital tracts and pediatric sites

Ordering information SLSolution™

Cat N.	Description	Pack size	Sample*
oEoo3N	SLSolution™ kit: 1ml of DTT in liquid phase, in PET tube +1 sterile Pasteur pipet for sputum sample transfer	300 pieces (6 boxes of 50 kits)	Respiratory samples
oEoo5N	SLSolution TM : 1ml of DTT in liquid phase, in PET tube in bulk	300 pieces (6 boxes of 50 kits)	Respiratory samples

Ordering information LBM® Broth

Cat N.	Description	Pack size	Sample*
474CE.A	BHI Broth 3ml in Screw Cap Tube in bulk	300 pieces 6 boxes of 50 pieces	eSwab®, liquid sample, swab sample
4U002N	THIOL Broth 4ml in PET Tube in bulk 300 pieces 6 boxes of 50 pieces		eSwab®, liquid sample, colture colony
477CE.A	TSB Broth plus 2.5% NaCl, 2ml in Screw Cap Tube in bulk TSB Salt Broth	300 pieces 6 boxes of 50 pieces	eSwab®, liquid sample, swab sample
475CE.A	SELENITE Broth 2ml in Screw Cap Tube in bulk Selenite	300 pieces 6 boxes of 50 pieces	eSwab®, Fecalswab®
476CE.A	LIM Broth 2ml in Screw Cap Tube	300 pieces 6 boxes of 50 pieces	eSwab [®]

 $^{{}^{\}star}\text{Suggested table. Please refer to your GLP procedures to choose the most appropriate device for the specific sampling site}\\$

Scientific references

All the studies we cited in this product focus are listed here.

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