

## Peer-reviewed publications

### SIBA® Technology

Hoser *et al.* 2014

**Strand Invasion Based Amplification (SIBA®): A Novel Isothermal DNA Amplification Technology Demonstrating High Specificity and Sensitivity for a Single Molecule of Target Analyte**

PLOS ONE, 9(11): e112656. doi:10.1371/journal.pone.0112656

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0112656>

*The SIBA technology is described in detail for the first time.*

Eboigbodin & Hoser, 2016

**Multiplex Strand Invasion Based Amplification (mSIBA) assay for detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae***

Scientific Reports, 6, 20487. Doi: 10.1038/srep20487

<http://www.nature.com/articles/srep20487>

*The second SIBA article describes the ability of the SIBA technology in multiplexed reactions (mSIBA). The study shows that the technology is compatible with probes, allowing the detection of multiple targets in the same reaction tube.*

Eboigbodin *et al.* 2016

**Reverse transcription strand invasion based amplification (RT-SIBA): a method for rapid detection of influenza A and B**

Applied Microbiology and Biotechnology, 2016, April 11. Doi: 10.1007/s00253-016-7491-y

<http://rd.springer.com/article/10.1007%2Fs00253-016-7491-y>

*The article describes reverse transcription SIBA (RT-SIBA) method for fast detection of viral RNA targets. The RT-SIBA assay was found to be more sensitive than PCR and it can detect 100 copies of influenza RNA in 15 minutes.*

Eboigbodin *et al.* 2016

**Rapid molecular diagnostic test for Zika virus with low demands on sample preparation and instrumentation**

Diagnostic Microbiology & Infectious Disease, 86, 369-371. Doi: 10.1016/j.diagmicrobio.2016.08.027

<http://www.sciencedirect.com/science/article/pii/S073288931630267X>

*Zikavirus has recently gained attention due to recent large outbreaks worldwide. This article describes an isothermal nucleic acid amplification method for the rapid detection of Zika virus. The method displayed high sensitivity and specificity for Zika virus RNA.*

Eboigbodin *et al.* 2017

**Rapid and sensitive real-time assay for the detection of respiratory syncytial virus using RT-SIBA®**

BMC Infectious Diseases, 17:134. Doi: 10.1186/s12879-017-2227-x

<https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-017-2227-x>

*Respiratory syncytial virus (RSV) is one of the most common causes of respiratory tract infections among young children and elderly. The article describes a rapid reverse transcription strand invasion based amplification (RT-SIBA) assay for detection of RSV from nasopharyngeal (NP) swabs. RT-SIBA displayed a detection time as rapid as that of rapid antigen detection tests (RADTs) and a high analytical sensitivity similar to that of RT-PCR.*

## Orion GenRead *C. difficile*

Hirvonen *et al.* 2016

**Novel portable platform for molecular detection of toxigenic *Clostridium difficile* in faeces: a diagnostic accuracy study**

Eur J Clin Microbiol Infect Dis. doi:10.1007/s10096-016-2860-0

<http://rd.springer.com/article/10.1007/s10096-016-2860-0>

*The results from the Orion GenRead *C. difficile* multi-center performance evaluation study were described. The article, which highlights the portability and easiness of use of the Orion GenRead instrument, concludes that the identification of toxigenic *C. difficile* from faeces with the Orion GenRead test system is highly sensitive and specific, and that the results are reproducible in different laboratories.*

## Posters

### SIBA® Technology

Flinck *et al.* 2014

**Fast and specific detection of *Salmonella enterica* ssp. *enterica* by SIBA®, a novel isothermal amplification technology**

Poster presented at 24<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Barcelona, Spain, 10-13 May, 2014.

*Isothermal SIBA assay for detection of *Salmonella enterica* ssp. *enterica* was described. The SIBA based *Salmonella* assay was found to be specific and sensitive, both with the clinical faecal samples and the QCMD samples.*

Kukkonen *et al.* 2015

***Salmonella* detection from faecal samples and food products by using a novel, fast and specific isothermal amplification technology, SIBA®**

Poster presented at 10<sup>th</sup> RME Conference, Noordwijkerhout, The Netherlands, 20-22 April, 2015.

*SIBA based test for detection of *Salmonella* from faecal samples and food products was introduced. The assay requires 8-10 hours enrichment of the samples prior to testing. The study demonstrated that the assay can be used to screen human carriers in 10-12 hours. The system can also be used with minor modifications to test environmental samples and food products, among others.*

Flinck *et al.* 2015

**Preliminary clinical utility of Salmonella detection using a novel, fast and specific isothermal amplification technology, SIBA®**

Poster presented at 25<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Copenhagen, Denmark, 25-28 April, 2015.

*Detection of Salmonella with SIBA based test was presented. The data shows that the assay is sensitive for Salmonella detection from clinical faecal samples.*

Mölsä *et al.* 2015

**Rapid Detection of Salmonella with a Novel Isothermal DNA Amplification Technology: Strand Invasion Based Amplification (SIBA®)**

Poster presented at 9<sup>th</sup> Symposium on CBRNE threats (NBC), Helsinki, Finland, 18-21 May, 2015.

*Orion GenRead system and SIBA assay for Salmonella was tested and compared with real time quantitative PCR assay. The results suggest that the SIBA technology offers a sensitive alternative to qPCR technology. Lightweight, small and standalone Orion GenRead instrument equipped with a battery would be useful in field conditions.*

Kainulainen *et al.* 2015

**Reverse transcription strand invasion based amplification (RT-SIBA) method for rapid detection of human rhinoviruses**

Poster presented at 9<sup>th</sup> European meeting on molecular diagnostics (EMMD), Noordwijk aan Zee, The Netherlands, 14-16 October, 2015.

*Development of an isothermal nucleic acid amplification method for detection of human rhinoviruses was reported. The RT-SIBA was able to detect the transcribed RNA or virus particles of HRVs within 30 minutes.*

Filén *et al.* 2016

**Rapid detection and differentiation of Influenza A and B viral RNA using a novel isothermal nucleic acid amplification method, RT-SIBA®**

Poster presented at the 4<sup>th</sup> International Molecular Diagnostics Europe conference, Lisbon, Portugal, 4-7 April, 2016.

*A development of reverse transcription SIBA technique (RT-SIBA) for detection of viral RNA targets of Influenza A and B was described. The RT-SIBA was found to be faster and more sensitive than CDC RT-PCR assay. The complete RT-SIBA test can be completed in less than 30 minutes.*

Moilanen *et al.* 2017

**Rapid Detection of Respiratory Syncytial Virus Using RT-SIBA®**

Poster presented at the European Society for Clinical Virology (ESCV) Stresa, Lake Maggiore, Italy, 13-16 September 2017.

## Orion GenRead C. difficile

Matero *et al.* 2014

**Inclusive and specific detection of toxinogenic Clostridium difficile by SIBA®, a novel isothermal amplification technology**

Poster presented at 24<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Barcelona, Spain, 10-13 May, 2014.

*A rapid SIBA assay for detection of toxigenic C. difficile was presented. The data shows that the assay detects all 35 toxin producing strains that were tested. The accuracy of the assay was demonstrated with 125 patient samples and 10 QCMD samples.*

Boisset *et al.* 2015

**A multi-centre performance evaluation study of the Orion GenRead® C. difficile test**

Poster was presented at 5<sup>th</sup> International Clostridium difficile Symposium, Bled, Slovenia, 19-21 May, 2015.

*A multi-centre performance evaluation study was performed with 1160 clinical faecal samples to evaluate the performance of the Orion GenRead C. difficile test system. The system was compared to a test based on isothermal nucleic acid amplification technology, a real-time PCR test and a combination of an antigen and real-time PCR based assays. Based on the results of this study, the Orion GenRead C. difficile test is an easy to use, robust, sensitive and specific method for detection of toxigenic C. difficile.*

Matero *et al.* 2015

**Performance of a novel C. difficile test system evaluated in three European laboratories and the effect of collection method and sample storage time on the results**

Poster presented at 9<sup>th</sup> European meeting on molecular diagnostics (EMMD), Noordwijk aan Zee, The Netherlands, 14-16 October, 2015.

*The performance of the Orion GenRead C. difficile system was evaluated in three different clinical microbiology laboratories with 1160 clinical faecal samples. The storage time of the samples was analysed and the results show that the faecal samples can be stored for up to 26 days at 4 °C prior to analysis.*

Siebert *et al.* 2015

**Evaluation du nouveau test GenRead® C. difficile test (Orion Diagnostica)**

Poster presented at 35<sup>th</sup> RICAI meeting, Paris, France, 14-15 December, 2015.

*The performance of the Orion GenRead C. difficile system was evaluated in the Centre Hospitalier Universitaire Grenoble Alpes with 156 clinical stool samples. The system was compared to a two-step algorithm (GDH and PCR) and the result show high sensitivity and specificity values.*

van der Reijden & Damsteegt, 2016

**Performance of an isothermal SIBA®-based Clostridium difficile assay in comparison to Real-Time PCR and antigen-based assays**

Poster presented at Dutch Society of Medical Microbiology congress NVMM, Arnhem, The Netherlands, 22-23 March, 2016.

*A comparison study with two molecular C. difficile tests, BDMax and Orion GenRead, was done. 98 clinical faecal samples were first screened with GDH rapid test prior to confirming the results with a molecular system. The sensitivity and specificity of 100 % was obtained when compared to BDMax. The results of this study suggest that Orion GenRead can be used in routine diagnostics to confirm the results obtained with the GDH assay.*

## Orion GenRead *Campylobacter*

Ruotsalainen *et al.* 2015

**Specific detection of *Campylobacter jejuni* and *Campylobacter coli* from human faeces using a novel isothermal amplification technology, SIBA®**

Poster presented at 25<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Copenhagen, Denmark, 25-28 April, 2015.

*A SIBA based Campylobacter test with good performance and easy sample preparation was described.*

Florea D *et al.*

**Rapid identification of *Campylobacter* species directly from faecal samples using an isothermal DNA amplification assay – a multicentre study**

Poster presented at 27<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Vienna, Austria, 22-25 April, 2017.