



Truenat[®] for Vector-Borne Diseases

Chip-based Real-Time Duplex PCR Test
for Malaria Pv/Pf & Dengue/Chikungunya

Small Carriers, Massive Consequences

Diseases transmitted by mosquitoes, ticks, flies, and fleas — such as malaria, dengue, chikungunya, and zika — claim over

700,000 lives

each year, making up more than 17% of all infectious diseases globally.



Delayed and inaccurate diagnosis in high-burden settings fuels preventable outbreaks, prolongs suffering, and restricts timely access to treatment.

Every 24 hours, nearly

2000 people

lose their lives to preventable vector-borne diseases.

(Source: WHO Vector-Borne Diseases Fact Sheet, 2020)

The Cost of Missed Diagnosis



Delayed dengue diagnosis can lead to shock or hemorrhagic fever.



Co-infections like dengue and chikungunya may be missed.



Misidentified malaria species result in ineffective treatment.



Overlapping symptoms often lead to mismanaged febrile illnesses.

A Diagnostic Gap That Delays Treatment

Conventional tools like antigen-based rapid diagnostic tests (RDTs) and serology face significant limitations:

The deletions of the HRP2 gene in *Plasmodium falciparum* are affecting the accuracy of malaria rapid diagnostic tests in countries such as India, Eritrea, and Peru.²

Dengue serology can lead to false positives because of cross-reactivity with other flaviviruses or previous infections.³

Mixed infections are becoming more common, yet are seldom identified using the current single-pathogen diagnostic tools.⁴

(²WHO Response Plan to pfrp2 Gene Deletions, 2021) (³CDC Dengue Diagnostic Testing Guidelines) (⁴Kumar et al., J Glob Infect Dis, 2020)

WHO Recommends Molecular Testing and Why?

To address such challenges, WHO highlights the importance of molecular diagnostics — especially PCR — in early detection, species differentiation, and identifying co-infections, enabling swifter case management and outbreak control.⁵

Global Burden



Dengue and chikungunya outbreaks are recurrent in Brazil, India, Sri Lanka, Mexico, and Thailand, especially during and post-monsoon seasons.

(Source: WHO Dengue Guidelines, 2009; Saswat et al., PLoS ONE, 2022)

Malaria affects over

249 million

people annually, with the heaviest burden in

Sub-Saharan Africa

India

Southeast Asia

(Source: WHO World Malaria Report 2023)

Bridging the Gap with Truenat®

Truenat® is a WHO-endorsed, chip-based PCR platform with assays for TB, dengue, chikungunya, and malaria. Portable and battery-operated, it enables lab-grade testing at the point of care, supporting faster diagnosis and early treatment in low-resource settings.

Truenat® Vector-Borne Disease Assay Portfolio



Truenat® Dengue/Chikungunya Assay

- Detects all four dengue serotypes (DEN-1 to DEN-4) and chikungunya virus
- Enables co-infection detection, critical in high-burden, outbreak-prone regions
- Differentiates infections in under 60 minutes from a single extraction
- Targets: 3'UTR gene of dengue, nsP4 gene of chikungunya



Truenat® Malaria Pv/Pf Assay

- Simultaneous detection of *Plasmodium vivax* and *P. falciparum*
- Effective even when there are deletions in the HRP2 gene, providing reliable results when antigen tests fall short.
- Detects parasite loads as low as 15–25 parasites/μL
- Provides Ct values for semi-quantitative parasite load insights

A Step Toward Elimination

With vector-borne diseases becoming increasingly complex and widespread, early and accurate diagnosis at the point of care is not just critical—it is essential and transformative.

Truenat® empowers health systems to act faster, detect earlier and respond smarter—anywhere, anytime.



KEY FEATURES



<1 hour turnaround time



Long shelf life

Room temperature stable reagents



User-friendly

Requires minimal human resource training



Lyophilized, ready-to-use PCR reagents



Smart chip

Replete with batch-specific data



Minimal biosafety requirements

Can be used even in resource limited settings

REFERENCE

* WHO Global Technical Strategy for Malaria 2021–2030; WHO Malaria Surveillance, Monitoring and Evaluation Manual, 2022



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