

Treponema Pallidum-Specific Aptamers for Syphilis Diagnostics

The solution is the development of Treponema pallidum-specific aptamers to be used in accurate point-of-care diagnostic assays for syphilis.

What is the Problem?

In the United States, there is a rapid and ongoing increase in syphilis, which is caused by the bacterium *Treponema pallidum*. Current laboratory diagnosis of syphilis has a multiple-day turnaround and is subject to inaccurate test results, significantly increasing the time to diagnosis and thus treatment. As a result, there is a need to develop more accurate and rapid syphilis detection methods to improve patient outcomes.

What is the Solution?

The solution is the development of *Treponema pallidum*-specific aptamers to be used in accurate point-of-care diagnostic assays for syphilis. Aptamers are single-stranded, folded oligonucleotides that bind to a specific target biomolecule. This technology uses high-affinity aptamers to serve as antigen detection reagents in lateral flow assays for syphilis diagnostics.

What is the Competitive Advantage?

The competitive advantage of this technology lies in its ability to improve upon current syphilis diagnostic assays in both accuracy and speed to diagnosis. The use of high-affinity aptamers in lateral flow assays can give results within minutes, enabling prompt treatment decision-making for patients with syphilis. As the global syphilis testing market size was valued at \$1.1 billion in 2020 with an expected CAGR of 5.6%, there is a significant opportunity for this technology to advance the field of syphilis diagnostics.

Technology ID

BDP 8825

Category

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