

# Sixth Wave AMIPs(TM) Expands Detection Capabilities to Include Prevalent Foodborne Pathogens Salmonella and Listeria

written by Raj Shah | November 1, 2022

November 1, 2022 ([Source](#)) – **Sixth Wave Innovations Inc. (CSE: SIXW) (OTCQB: SIXWF) (FSE: AHUH) (“Sixth Wave”, “SIXW” or the “Company”)** is pleased to announce that its patent pending Accelerated Molecularly Imprinted Polymer (“**AMIPs™**”) technology has expanded its library of detectable pathogens, such as E.coli, to include bacteria for Salmonella, Listeria, and Sarcina. Sixth Wave has integrated new bacteria-imprinted biosensor components into a prototype microfluidic device. Preliminary selectivity data shows very promising results paving the way for quick onsite multiplex testing capabilities (one test can simultaneously detect multiple pathogens).

This advancement allows for Sixth Wave to commercialize a set of rapid diagnostic tools for the \$21.1B food safety testing industry and provide a truly global, revolutionary solution to food safety testing.

*“E. coli, Salmonella, and Listeria are three of the most prevalent bacteria associated with foodborne illnesses,” explained Dr. Garrett Kraft, Vice President of Innovation at Sixth Wave. “The ability to rapidly test and detect these pathogens on food and processing equipment allows for immediate intervention and remediation that can reduce wide spread contamination that results in loss of product, foodborne illness*

*and subsequent devastating economic impact to the food producers associated with product recalls.”*

The global market for food safety testing is estimated at USD 21.1 billion in 2022; it is projected to grow at a CAGR of 8.1% to reach USD 31.1 billion by 2027. According to the World Health Organization (WHO), each year, unsafe food contributes to 420,000 deaths and 600 million cases of foodborne illness worldwide. The U.S. Centers for Disease Control and Prevention (CDC) actively tracks foodborne illness cases and has identified 15 pathogens that account for over 95% of all cases in the United States.

### **2018 Estimates by the USDA include<sup>1</sup>:**

- Salmonella – 1.03 million cases, 378 deaths, **costs \$4.14 billion/year.**
- E coli 0157 – 63,153 cases, 30 deaths, costs **\$311 million/year.**
- Listeria – 1,591 cases, 247 deaths, **costs \$3.19 billion/year.**

1) The economic impact model for foodborne illnesses used by the US Department of Agriculture (USDA) is based on the CDC case numbers and includes other factors such as hospitalization rate, mortality rate, and average length of stay to estimate costs. The Economic Research Service (ERS) at the USDA publishes an updated report estimating the costs of foodborne illness every 5 years.

(<https://www.ers.usda.gov/data-products/cost-estimates-of-foodborne-illnesses.aspx>)

**The largest food safety industry obstacle is the exorbitant cost of food safety testing equipment, skilled labour and lab testing. This problem is further exacerbated in 3<sup>rd</sup> world**

**countries that lack the financial resources to comply to recommended best practices.**

The most common testing techniques includes chromatography and spectroscopy for small molecule and heavy metals testing and polymerase chain reaction and immunoassay for pathogen detection. The cost of lab testing is one of the main challenges faced by importers and exporters when it comes to product compliance. The price of third-party lab testing can range from \$100 to \$100,000, depending on the number of applicable regulations, the tests that must be performed, and the number, material, and colour of the products.<sup>2</sup> Even domestic markets in the U.S. an estimated 75% of producers use contract lab testing and a common E. coli test cost on average \$30/sample.<sup>3</sup> The expense of food safety testing and a lack of adequate infrastructure degrades compliance even though food safety testing is the backbone of the whole public health surveillance system.

Sixth Wave's AMIPs™ Testing Platform offers food producers a fast, reliable, and inexpensive platform for increasing testing frequency and ensuring the quality of all food products in a processing facility. The near instant testing time (seconds up to ~5 minutes) reduces test times from the days to weeklong turnaround of current methods. The rapid testing times can reduce facility down time and allow for more frequent testing to mitigate the need to issue recalls. Contaminated equipment can be quickly identified and cleaned, resulting in smaller batches of tainted products that are easily isolated before even leaving the facility. Furthermore, the testing can be done on-site at fractions of the cost required for the currently used certified lab testing.

In combination with the AMIPs™ rapid detection virus and

bacteria (or pathogens) platform, Sixth Wave also developed its Pathogenic Amines Detection System (PADS™). PADS™ is a sensing technology for detection of biomarkers associated with food spoilage. The prototype food sensor is easily integrated into individually packaged retail meat products and allows for the company to offer a suite of products to help food producers monitor the safety of their product throughout the production process. The AMIPs™ and PADS™ technologies address critical operational pain points in the food production sector and give consumers confidence in the safety of the products they are buying.

2) <https://www.marketsandmarkets.com/Market-Reports/food-safety-365.html>

3) FSIS testing is conducted in three stages: potential screening, presumptive screening, and a confirmatory test. Most industry producers only conduct an initial screening test and make disposition decisions without waiting for confirmation.

([https://www.fsis.usda.gov/sites/default/files/media\\_file/2020-07/FSIS-Non-0157-STECC-Testing-CBA-June-2020.pdf](https://www.fsis.usda.gov/sites/default/files/media_file/2020-07/FSIS-Non-0157-STECC-Testing-CBA-June-2020.pdf))

*“Expanding the library of pathogens detected with the AMIPs™ platform allows us to identify new opportunities and applications of the technology,” said Dr. Jon Gluckman, CEO at Sixth Wave. “The latest developments of common pathogens involved in foodborne illness couples perfectly with our legacy PADS™ technology to offer comprehensive solutions to food producers to reduce or eliminate the costs associated with recalls with a suite of Sixth Wave products. As a result of our breakthroughs in bacteria detection, the Company is actively seeking industry partners for licensing opportunities and gauging interest from major market players to determine if a standalone product division is required.”*

## About Sixth Wave

Sixth Wave is a nanotechnology company with patented technologies that focus on extraction and detection of target substances at the molecular level using highly specialized Molecularly Imprinted Polymers (MIPs). The Company is in the process of a commercial rollout of its Affinity™ cannabinoid purification system, as well as IXOS®, a line of extraction polymers for the gold mining industry. The Company is in the development stages of a rapid diagnostic test for viruses under the Accelerated MIPs (AMIPs™) label.

Sixth Wave can design, develop, and commercialize MIP solutions across a broad spectrum of industries. The company is focused on nanotechnology architectures that are highly relevant for the detection and separation of viruses, biogenic amines, and other pathogens, for which the Company has products at various stages of development.

For more information about Sixth Wave, please visit our web site at: [www.sixthwave.com](http://www.sixthwave.com)

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## Cautionary Notes

*This press release includes certain statements that may be deemed “forward-looking statements” including statements regarding the planned use of proceeds and performance of the AMIPs™ technologies. All statements in this release, other than statements of historical facts, that address future events or*

developments that the Company expects, are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance, and actual events or developments may differ materially from those in forward-looking statements. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause the Company's actual performance and financial results in future periods to differ materially from any projections of future performance or results expressed or implied by such forward-looking statements. In particular, successful development and commercialization of the AMIPs™ technology are subject to the risk that the AMIPs™ technology may not prove to be successful in detecting virus targets effectively or at all, the uncertainty of medical product development, the uncertainty of timing or availability of required regulatory approvals, lack of track record of developing products for medical applications and the need for additional capital to carry out product development activities. The value of any products ultimately developed could be negatively impacted if the patent is not granted. The Company has not yet completed the development of a prototype for the product that is subject of its patent application and has not yet applied for regulatory approval for the use of this product from any regulatory agency.