

AUTOMATED PRIMING AND LIBRARY LOADING SERVICES

CROSS-REFERENCE

[1] This application claims priority to provisional patent application Serial No. 62/611,846, filed on December 29, 2017, provisional patent application Serial No. 62/646,135 filed on March 21, 2018; and provisional patent application Serial No. 62/730,288, filed on September 12, 2018; all of which are incorporated herein by reference in their entirety.

BACKGROUND

[2] Food producers recall their products from the marketplace when the products are mislabeled or when the food may present a health hazard to consumers because the food is contaminated or has caused a foodborne illness outbreak. Although these producers rely on several existing monitoring programs for pathogens, natural toxins, pesticides, and other contaminants about 48 million cases of foodborne illness are still identified annually in the United States alone — the equivalent of sickening 1 in 6 Americans each year. And each year these illnesses result in an estimated 128,000 hospitalizations and 3,000 deaths. The threats are numerous and varied, with symptoms ranging from relatively mild discomfort to very serious, life-threatening illness. While the very young, the elderly, and persons with weakened immune systems are at greatest risk of serious consequences from most foodborne illnesses, some of the microorganisms detected in foods pose grave threats to all persons.

SUMMARY

[3] In some aspects the disclosure provides a method comprising: (a) deploying an assay to one or more food processing facilities; (b) performing a sequencing reaction of a food sample or of an environmental sample from said one or more food processing facilities; (c) transmitting an electronic communication comprising a data set associated with said sequencing reaction of said food sample or of said environmental sample from said one or more food processing facilities to a server; and (d) scanning, by a computer, at least a fraction of said transmitted data set for one or more polymorphic regions associated with a microorganism.

[4] In some aspects the disclosure provides a method comprising: (a) obtaining a plurality of nucleic acid sequences from a sample; (b) scanning, by a computer, at least a fraction of said plurality of said nucleic acid sequences for a plurality of nucleic acid regions from one or more microorganisms selected from the group consisting of: a microorganism of the Salmonella genus, a microorganism of the Campylobacter genus, a microorganism of the Listeria genus, and a