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it provides further evidence that the full utilization of these tools can lead to early detection and control of foodborne diseases enhancing public health and reducing the frequency of disease outbreaks keywords foodborne pathogens bacteria fungi viruses culture based pcr immunoassays ngs illnesses 1 the identification of foodborne pathogens is associated with conventional e g culture based biochemical test based immunological based and nucleic acid based methods and advances e g hybridization based array based spectroscopy based and biosensor based process techniques in this review we describe how genome based approaches have advanced our understanding of the evolution and spread of enduring bacterial foodborne hazards as well as their role in identifying the current high throughput detection technologies for foodborne pathogens have advanced from these fundamental methods in simple terms loc technology enhances detection efficiency by automating miniaturizing and integrating numerous reactions simultaneously though detection limits and costs still need further improvement reviewed technologies have high potential to assist the food industry in the on site detection of biological hazards such as foodborne pathogens and toxins to maintain safe and healthy foods rapid detection methods can be categorized into nucleic acid based biosensor based and immunological based

methods this review emphasizes on the principles and application of recent rapid methods for the detection of foodborne bacterial pathogens point of care testing poct technology is a rapidly developing foodborne pathogen detection method in recent years that has advantages such as simple operation rapid operation portability and automation huang et al 2018 xu et al 2021 on site detection of food and waterborne bacteria current technologies challenges and future directions pmc journal list hhs author manuscripts pmc8276861 as a library nlm provides access to scientific literature finally this review offers targeted recommendations for future development and commercialization of diagnostic technologies specifically for emerging and re emerging foodborne pathogens keywords biosensor foodborne pathogens limit of detection portable rapid detection fortunately with the development of biotechnologies and nanotechnologies various kinds of new technologies for rapid detection of pathogens have been developed so far such as nucleic acid based methods antibody based methods and aptamer based assays this review summarizes the current and anticipated global impact of improved technologies for foodborne disease surveillance and proposes key areas that will require particular attention including the need for training activities public private partnerships supporting food safety and appropriate food safety policy frameworks in this article we review several isothermal amplification methods and their implementation in foodborne pathogen detection including loop mediated isothermal amplification lamp zhao et al 2010a rolling circle amplification rca zhou et al 2008 strand displacement amplification sda wu et al 2015 cross priming amplification though detection limits and costs still need further improvement reviewed technologies have high potential to assist the food industry in the on site detection of biological hazards such as

traditionally the most popular preservation technologies for the reduction of microbial contamination of food and pathogens in particular have been the modification of the water activity and or ph heat treatments the addition of chemical preservatives and the control of storage temperature of foods ift 2001 in aip advances researchers from guangdong university of technology and pudong new district people s hospital developed a new method for detecting foodborne pathogens that is faster cheaper and new technology for food borne illness has pros and cons american council on science and health by ruth kava march 26 2018 trying to determine the causative agent for outbreaks of foodborne illnesses can be a gargantuan epidemiological task though detection limits and costs still need further improvement reviewed technologies have high potential to assist the food industry in the on site detection of biological hazards such as foodborne pathogens and toxins to maintain safe and healthy foods 1 3 1 1 bacteria bacteria are relatively simple single celled organisms belonging to the domain of prokaryotic microorganisms the main bacteria that cause food poisoning are campylobacter spp salmonella spp listeria monocytogenes staphylococcus aureus escherichia coli and vibrio spp the article 3d printed microfluidic chip integrated with nanointerferometer for multiplex detection of foodborne pathogens is authored by silu feng kongjin mo and xin song it will appear in foodborne diseases are caused by contamination of food and occur at any stage of the food production delivery and consumption chain they can result from several forms of environmental contamination including pollution in water soil or air as well as unsafe food storage and processing

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the article 3d printed microfluidic chip integrated with nanointerferometer for multiplex detection of foodborne pathogens is authored by silu feng kongjin mo and xin song it will appear in

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