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## Food quality analysis based in multi-target rapid detection techniques

Susana Sanchez Gomez and Shi Da Spain

**Statement of the Problem:** Food control regulation has focused on fraud prevention, food safety and nutritive substance preservation. In the last years, the interest in food fraud control has increased in official organisms, companies and industry. The globalization, free trade and international trade have led to an increment in food exchanges. Along with this, a rise in problems associated to fraud has been occurred. The detection of different animal species in meat is not only a relevant tool to control the fraud, but also is important for religious reason. Beside this, the incidence of foodborne diseases has increased over the years and resulted in major public health problem globally. The conventional methods for detecting control food fraud and safety are laborious, time consuming and expensive (those related with biology molecular methods). Thus, new techniques are needed to solve those problems.

**Aim:** A new technique based in Multi-Target Rapid Detection Techniques (MRDT) and DNA chromatography has been developed for two different purposes: meat fraud control and pathogens detection in food.

**Methodology:** Two new kits based in rapid detection methods have been developed: (i) Meat fraud - A kit for detection of six different animal species showed a higher efficiency and sensitivity (0.01-0.005%) comparing to other methods and was easy to handle, low-cost and time-saving. (ii) Bacteria test - A kit for detection of four different bacterial strains was developed reducing the detection time (from 24-72h of culture methods to 3-12h).

**Conclusion & Significance:** This technology can be useful for food control. Due to its advantages, the food control could be done regularly to monitor the food quality: not only in the end-product, but also in the raw material and during the manufacturing process.

dnacatcher@gmail.com