Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary information

Paper-based rapid detection of pork and chicken using LAMP-magnetic bead aggregates

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Table S1 Details for the extracted food samples

No.	Samples	Species as labeled	Detection of DNA with MB
1	Spiced pork cubes	*Sus scrofa*	Yes
2	Pork mince with beans paste	*Sus scrofa*	Yes
3	Chopped pork & ham	*Sus scrofa*	Yes
4	Chao San Si (pork & bamboo shoot)	*Sus scrofa*	Yes
5	Mutton luncheon with chicken	*Gallus gallus, Puffinus tenuirostris*	No
6	Corned beef	*Bos taurus*	No
7	Chicken luncheon meat	*Gallus gallus*	No
8	Beef loaf	*Bos taurus*	No
9	Chicken luncheon meat	*Gallus gallus*	No
10	Mallow bakes	*Bos taurus*	No
11	Chamallows	*Bos taurus*	No
12	Marshmallow	*Bos taurus*	No

13	Boar meat	*Sus scrofa*	Yes
14	Corned mutton	*Puffinus tenuirostris*	No
15	Chicken luncheon meat	*Gallus gallus*	No
16	Curry beef	*Bos taurus*	No
17	Chicken luncheon meat	*Gallus gallus*	No
18	Corned ostrich	*Struthio camelus*	No
19	Lamb curry with potatoes	*Ovis aries*	No
20	Duck meat	*Anas platyrhynchos*	No
21	Canned beef luncheon meat	*Bos taurus*	No
22	Sliced ham	*Sus scrofa*	Yes

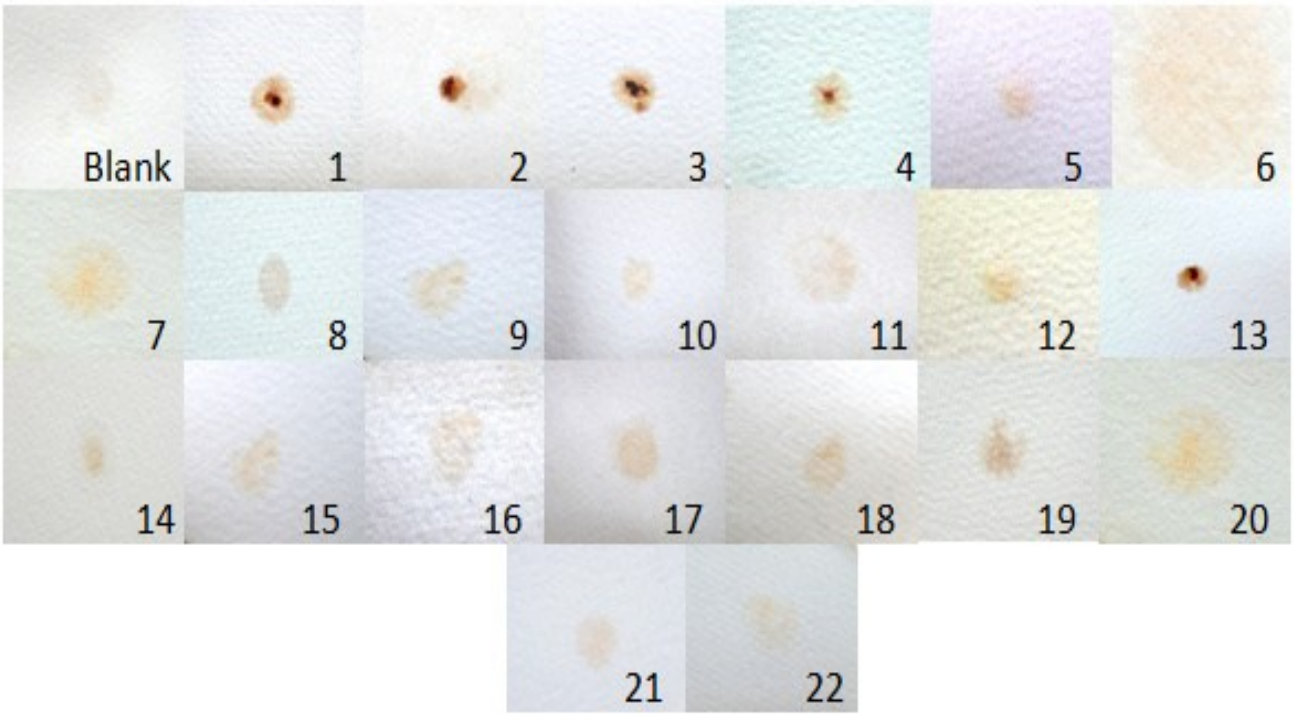
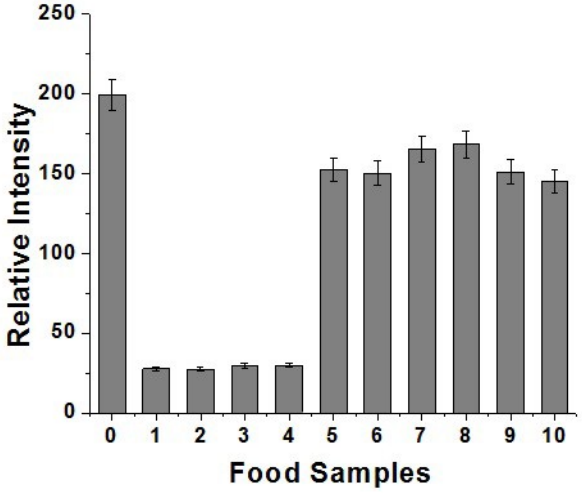
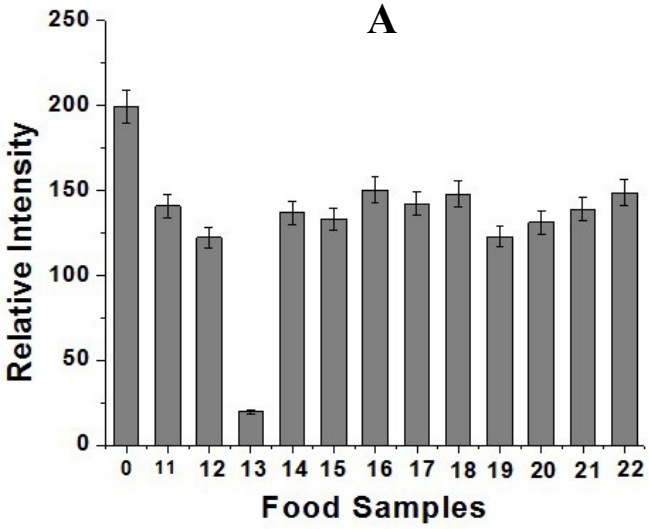


Figure S1 Images of spots obtained on filter paper with different extracted food samples (detailed in Table 1). MBs were mixed with LAMP amplicons from the food samples prepared using pork-specific primers.



A

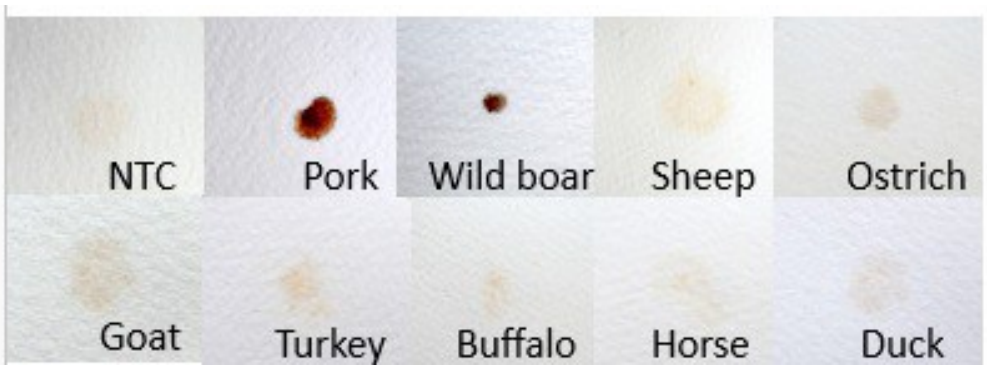


B

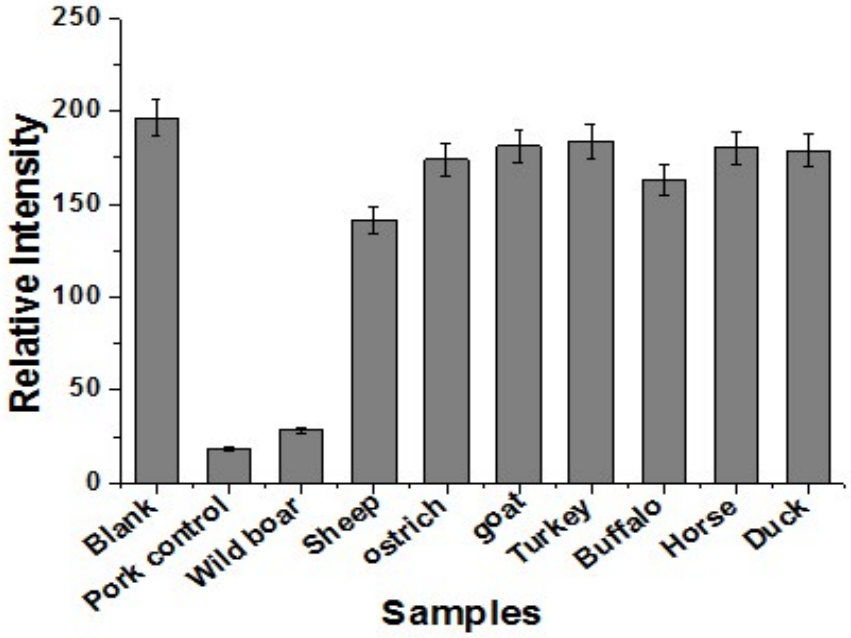
Figure S2 Relative intensities calculated for the experiments shown in Figure S1 for food samples 0–10 (A) and 11–22 (B). The concentration of genomic DNA in each reaction mixture is 100 pg/μL. Data are normalized to the background signal. LAMP reactions were performed at 63°C for 60 min.

Table S2: Paper and magnetic bead-based multi-species detection using pork-specific primers

Samples	Species as labeled	Detection on paper using pork primers and MB
Pork	*Sus scrofa*	Yes
Wild boar	*Sus scrofa*	Yes
Sheep	*Ovis aries*	No
Ostrich	*Struthio camelus*	No
Goat	*Capra aegagrus hircus*	No
Turkey	*Meleagris gallopavo*	No
Buffalo	*Bison bison*	No
Horse	*Equus caballus*	No
Duck	*Anas platyrhynchos*	No



A



B

Figure S3: A. Cross-reaction with LAMP amplicons from different genomic DNA (Table S2) B. Relative intensities calculated from the LAMP amplicons of the above samples. The concentration of genomic DNA in each reaction mixture is 100 pg/µL. Data are normalized to the background signal. LAMP reactions were performed at 63°C for 60 min.