

Supplementary information attached file

Table S1. Detection immunosensor results against *E.coli* O157:H7. This analysis includes a list of serial samples quantified of the *E.coli* O157:H7 strain spiked on pre-enrichment medium and samples of minced beef inoculated by these dilutions. The evaluation aimed to assess the performance of the detection method across different operators and measurement equipment, but on identical samples.

Target sample *	Immunosensor response**	Quantitative Enumeration (CFU/ml)***
<i>E.coli</i> O157:H7 CECT4972 01/2023	+	$2,5 \times 10^6$
<i>E.coli</i> O157:H7 CECT4972 01/2023	-	0
<i>E.coli</i> O157:H7 CECT4972 01/2023	+	$2,5 \times 10^5$
<i>E.coli</i> O157:H7 CECT4972 01/2023	+	$2,5 \times 10^4$
<i>E.coli</i> O157:H7 CECT4972 01/2023	+	4×10^3
<i>E.coli</i> O157:H7 CECT4972 03/2023	+	4×10^1
<i>E.coli</i> O157:H7 CECT4972 03/2023	+	4×10^2
<i>E.coli</i> O157:H7 CECT4972 03/2023	+	$3,8 \times 10^6$
<i>E.coli</i> O157:H7 CECT4972 03/2023	+	$3,8 \times 10^4$
<i>E.coli</i> O157:H7 CECT4972 03/2023	+	$3,8 \times 10^5$
<i>E.coli</i> O157:H7 CECT4972 04/2023	-	0

E.coli O157:H7 CECT4972 04/2023	+	1×10^2
E.coli O157:H7 CECT4972 04/2023	+	1×10^3
E.coli O157:H7 CECT4972 04/2023	-	0
E.coli O157:H7 CECT4972 04/2023	-	1×10^1
Minced beef CECT4972	+	2×10^3
Minced beef CECT4972	+	$4,5 \times 10^5$
Minced beef CECT4972	+	$2,0 \times 10^2$
Minced beef CECT4972	+	$3,2 \times 10^1$
Minced beef CECT4972	+	$3,0 \times 10^5$
Minced beef CECT4972	+	$4,6 \times 10^3$
Minced beef CECT4972	+	$5,2 \times 10^2$
Minced beef CECT4972	+	$2,0 \times 10^1$
Minced beef CECT4972	+	$1,0 \times 10^2$
Minced beef CECT4972	+	$2,0 \times 10^1$
Minced beef CECT4972	+	$1,5 \times 10^5$
Minced beef CECT4972	+	$6,2 \times 10^4$
Minced beef CECT4972	+	$1,5 \times 10^3$
Minced beef CECT4972	+	$4,6 \times 10^2$
Minced beef CECT4972	-	0
Minced beef CECT 4972	+	$1,0 \times 10^1$

* Samples were in chronological order: inoculum strains CECT4972 and meat samples spiked with *E.coli* O157:H7 strain CECT 4972.

** + Immunosensor detection of *E.coli* O157:H7.-Absence of *E.coli* O157:H7.

*** *E.coli* O157:H7 artificial contamination was estimated based on the concentration of Colony Forming Units (CFU) per milliliter (CFU/mL) in the first dilution of each sample. This measurement reflects the number of *E.coli* O157:H7 entire bacteria in the initial sample.

Table S2. Detection immunosensor results of verotoxins 1 and verotoxin 2 of *E.coli* O157:H7. This analysis includes a list of quantified samples of serial dilutions of commercial verotoxin 1 and verotoxin 2 spiked on pre-enrichment medium and samples of minced beef inoculated by these dilutions.

Target sample *	Immunosensor response**	Concentration in ppm ***
Verotoxin 1 01/2003	+	3,03
Verotoxin 1 01/2003	+	6,05
Verotoxin 1 01/2003	+	12,10
Verotoxin 1 01/2003	+	24,20

Verotoxin 1 01/2003	+	48,40
Verotoxin 1 03/2003	+	1,20
Verotoxin 1 03/2003	-	0
Verotoxin 1 03/2003	-	0,2
Verotoxin 2 01/2003	+	1,19
Verotoxin 2 01/2003	+	2,38
Verotoxin 2 01/2003	+	4,75
Verotoxin 2 01/2003	+	9,50
Verotoxin 2 03/2003	+	19,00
Verotoxin 2 03/2003	+	38,00
Verotoxin 2 03/2003	-	0
Verotoxin 2 03/2003	-	0,2
Minced beef VT1	+	3,03
Minced beef VT1	+	6,05
Minced beef VT1	+	12,10
Minced beef VT1	+	24,20
Minced beef VT1	+	48,40
Minced beef VT1	+	1,20
Minced beef VT1	-	0,2
Minced beef VT2	+	1,19
Minced beef VT2	+	2,38
Minced beef VT2	+	4,75

Minced beef VT2	+	9,50
Minced beef VT2	+	19,00
Minced beef VT2	+	38,00
Minced beef VT2	-	0
Minced beef VT2	-	0,2

* Samples were in chronological order: commercial inoculum of Verotoxin 1 and Verotoxin 2 and meat samples spiked with Verotoxin 1 and verotoxin 2

** + Immunosensor detection of each verotoxin.- Immunosensor Absence response of each verotoxin.

*** Verotoxin artificial contamination was estimated based on the concentration in parts per million (ppm) in the first dilution of each sample. This measurement reflects the number of recombinant protein or verotoxin in the initial sample