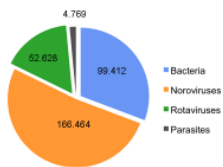


Rapid diagnostics from patients suspected to suffer from Norovirus infection reveals novel EHEC variant

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Increased gastroenteritis within the German population

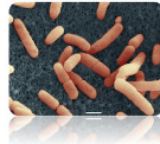


Are noroviruses the causative agent for the outbreak?

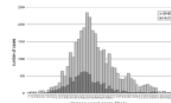
Increased gastroenteritis within the German population

Exploding numbers of patients with Hemolytic-uremic syndrome (HUS)

Outbreak caused by an enterohemorrhagic E. coli (EHEC)



May 2011: EHEC Outbreak in Germany



- National Reference Center overloaded
- No sufficient diagnostic capabilities at resident laboratories
- Increasing hysteria/excitement: Each diarrhoea = EHEC?

Novel EHEC strain O104:H4

- Stx-2 locus (EHEC)
- Stacked brick aggregative adherence (EaggEC)
- Extended spectrum β -lactamase (ESBL) antibiotic resistance profile
- Intimin-negative (eae) and enterohaemolysin (hly)-negative

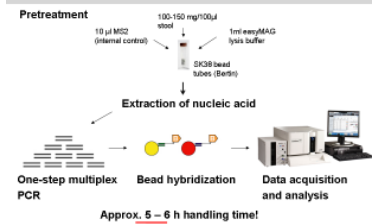


May 2011: EHEC Outbreak in Germany

Diagnostic challenge:

- Rapid detection of the new EHEC strain O104:H4
- Simultaneous exclusion from a differential diagnostic standpoint

Workflow of the GPP xTAG assay



Gastroenteric pathogens detected by xTAG GPP

BACTERIA

Campylobacter
Clostridium difficile toxin A/B
E. Coli O157
Enterotoxigenic E. coli (ETEC) LT/ST
Salmonella
Shiga-like Toxin producing E. coli (STEC) stx 1/stx 2
Shigella
Vibrio cholerae
Yersenia enterocolitica

VIRUSES

Adenovirus 40/41
Norovirus GI/GII
Rotavirus A

PROTOZOA/PARASITES

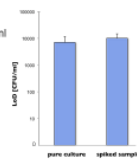
Cryptosporidium
Entamoeba histolytica
Giardia

Limit of detection of O104:H4 detected by xTAG GPP determined with LX100/200

O104:H4

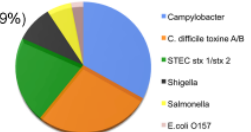
pure culture LoD: 7.07×10^3 CFU/ml
spiked preparation LoD: 1.01×10^4 CFU/ml

STEC stx 1/stx 2 LoD: 8.59×10^4 CFU/ml (by Luminex)



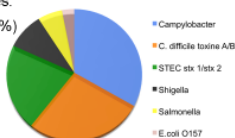
Incidence of diarrhoea in June – August in Merheim, Cologne

92 stool samples:
32 samples (29%) were positive
34 pathogens were detected



Incidence of diarrhoea in June – August in Merheim, Cologne

92 stool samples:
32 samples (29%) were positive
34 pathogens were detected



Stx 2 positive:
4 samples

Stool samples adopted for the respiratory viruses panel (RVP)

62 stool samples

2 samples were positive for Enterovirus/Rhinovirus

From Norovirus to the new EHEC variant O104:H4

Luminex xTAG GPP can identify both