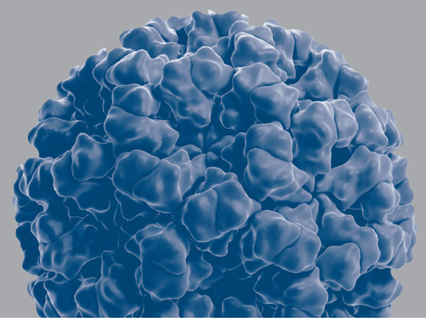

Noroviruses is the main causative agent of gastroenteritis in all age groups, particularly during winter. These viruses are the major cause of acute gastroenteritis (AG) in adults and the second among children. Symptoms are characterized with sudden vomiting (sometimes violent) with diarrhea, and sometimes with abdominal pain, nausea and fever. Incubation period is about 12 to 72 hours. According to the weak infective dose estimated at 10 to 100 viral particles, the potential for transmission from person to person is significant. Noroviruses of genogroups I and II have a substantial gene diversity, and are correspondingly further divided into genotypes.

RELIABLE FOODBORNE VIRUS DETECTION

Confidence comes from a simplified workflow

EQUIPMENT AND REAGENTS PROVIDED BY BIOMÉRIEUX

Recommended Equipment and Reagents		
PCR Real Time	414 056	GENE-UP® Thermocycler
Lysis & Extraction	421 367	Electronic Pipette for eGENE-UP
Lysis & Extraction	421 366	eGENE-UP® Stand
Lysis & Extraction	200 292	NucliSENS® lysis buffer (2 mL) 48 tests
Lysis & Extraction	280 134	NucliSENS® easyMAG® Lysis Buffer (4 x1 liter)
Lysis & Extraction	280 130	NucliSENS® easyMAG® Extraction Buffer 1 (4 x1 liter)
Lysis & Extraction	280 131	NucliSENS® easyMAG® Extraction Buffer 2 (4 x1 liter)
Lysis & Extraction	280 132	NucliSENS® easyMAG® Extraction Buffer 3 (4 x1 liter)
Lysis & Extraction	280 133	NucliSENS® easyMAG® Magnetic Silica (384 extractions)

Process Control Kit		
Process Control Kit	KMG (50 Samples)	Mengo Extraction Control

Virus Kits For Detection			Quantification Standards	
PCR Kit	KADVC (48 reactions)	Adenoconsensus@ ceeramTOOLS	Not available	
PCR Kit	KADV (48 reactions)	Adenovirus@ ceeramTOOLS	KQADV	Adenovirus – Q Standard
PCR Kit	KASV (48 reactions)	Astrovirus@ ceeramTOOLS	Not available	
PCR Kit	KENV (48 reactions)	Enterovirus@ ceeramTOOLS	KQENV	Enterovirus – Q Standard
PCR Kit	KHAV (48 reactions)	HepatitisA@ ceeramTOOLS	KQHAV	Hepatitis A – Q Standard
PCR Kit	KHEV (48 reactions)	HepatitisE@ ceeramTOOLS	KQHEV	Hepatitis E – Q Standard
PCR Kit	KNVGIGII (48 reactions)	NoroGIGII@ ceeramTOOLS	See KQNVGI & KQNVGII	
PCR Kit	KNVGI (48 reactions)	NorovirusGI@ ceeramTOOLS	KQNVGI	Norovirus GI – Q Standard
PCR Kit	KNVGII (48 reactions)	NorovirusGII@ ceeramTOOLS	KQNVGII	Norovirus GII – Q Standard
PCR Kit	KRV (48 reactions)	Rotavirus@ ceeramTOOLS	KQRV	Rotavirus – Q Standard
PCR Kit	KSAV (48 reactions)	Sapovirus@ ceeramTOOLS	KQSAV	Sapovirus - Q Standard

Other Detection Kits Available – Parasites			Quantification Standards	
PCR Kit	KCRYPT	cryptosporidium@ ceeramTOOLS	Not available	
PCR Kit	KGIAR	giardia@ ceeramTOOLS	Not available	

Full list of equipment, accessories and reagents upon request

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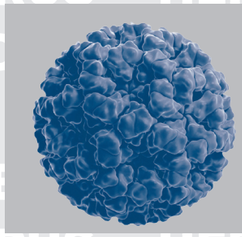
www.biomerieux.com • www.biomerieux-industry.com

DETECTION OF FOODBORNE VIRUSES

- Training according to OPTIMIZED bioMérieux protocols or ISO15216
- Standardized work flow and kits complying to ISO15216
- Kits for extraction, detection, identification, quantification
- A large range of virus kits available
- LOD Method 250 genome copies/tested portion (shellfish 500)
- High sensitivity & reproducibility

NOROVIRUS GI – ENTEROVIRUS - HEPATITIS A V
ROTAVIRUS – SAPOVIRUS – HEPATITIS E VIRUS
ADENOVIRUS – ASTRO
CRYPTOSPORIDIUM –
NOROVIRUS GI – ENTE
ROTAVIRUS – SAPOVIRUS – HEPATITIS E VIRUS



Request your **practical training** with our team of highly qualified Application Specialists to ease the implementation of a virus detection method in your own laboratory.

A COMPLETE WORKFLOW

Sample pre-treatment ISO or non ISO matrices

ISO matrices					Other matrices
Bivalve molluscan shellfish	**Soft fruits**	**Vegetables, leafs, bulbs, stems**	**Bottled water**	**Food surfaces**	**Semi-dried tomatoes, RTE Food, date fruits...**
2 grams of digestive tissues	25 grams	25 grams	1 liter	100 cm²	Upon request
1 • Dissection (2 g of digestive glands **2** • Recovery of viruses (10 µL of Mengovirus. 2mL of proteinase K) **3** • Lysis of virus	**1** • Preparation of samples (25 g in a sterile blender bag) **2** • Elution (40 mL of TGEB. 1 mL of pectinase. 10 µL of Mengovirus) **3** • Clarification (retrieve eluate, check pH, centrifuge) **4** • Incubation (40 mL supernatant + 10 mL PEG/ NaCl, incubate) **5** • Concentration (centrifuge, retain pellets) **6** • Purification (chloroform butanol, centrifuge, retain aqueous phase) **7** • Lysis of virus	**1** • Preparation of samples (25 g in a sterile filter bag) **2** • Elution (40 mL of TGEB. Optional 1 mL of pectinase. 10 µL of Mengovirus) **3** • Clarification (retrieve eluate, check pH, centrifuge) **4** • Incubation (40 mL supernatant + 10 mL PEG/ NaCl, incubate) **5** • Concentration (centrifuge, retain pellets) **6** • Optional purification (chloroform butanol, centrifuge, retain aqueous phase) **7** • Lysis of virus	**1** • Filtration on membrane (10 µL of Mengovirus **2** • Elution of membrane and bottle (4 mL and 10 mL of TGEB, incubate, recovery of eluate, second rinse of bottle, secovery of eluate) **3** • Concentration (adjust pH 7, transfer in concentration device, centrifuge, retain concentrate) **4** • Lysis of virus	**1** • Elution (swab with PBS, 10 µL of Mengovirus) **2** • Lysis of virus	Specific protocols are available for most matrices.

Extraction

Lysis	Purification
	1 • Capturing nucleic acids **2** • Washing (washing buffer 1, washing buffer 2, washing buffer 3 **3** • Elution (100µL dilution buffer) **4** • Dilution (1:10)

Amplification by PCR

RNA	DNA
Target masterMix 19µL, enzyme 1µL = 20µL + 5µL RNA extracts = **25µL** 45 Cycles: similar program for all targets !	Target masterMix 20µL + 5µL DNA extracts = **25µL** 45 Cycles: similar program for all targets !

160 min — **Food Matrices & Environmental Matrices**

200 min — **Mengovirus Process Control for all Matrices - ISO Recommended**

200 min — **Lysis with NUCLiSENS® reagents** ISO recommended

100 min — **DNA/RNA Purification with EGENE-UP® & NucliSENS® reagents** ISO recommended

30 min — **Real Time PCR GENE-UP**

40 min — **ceeramTOOLS Kits 1 - Detection 2 - Quantification**

90 min

BIOMÉRIEUX

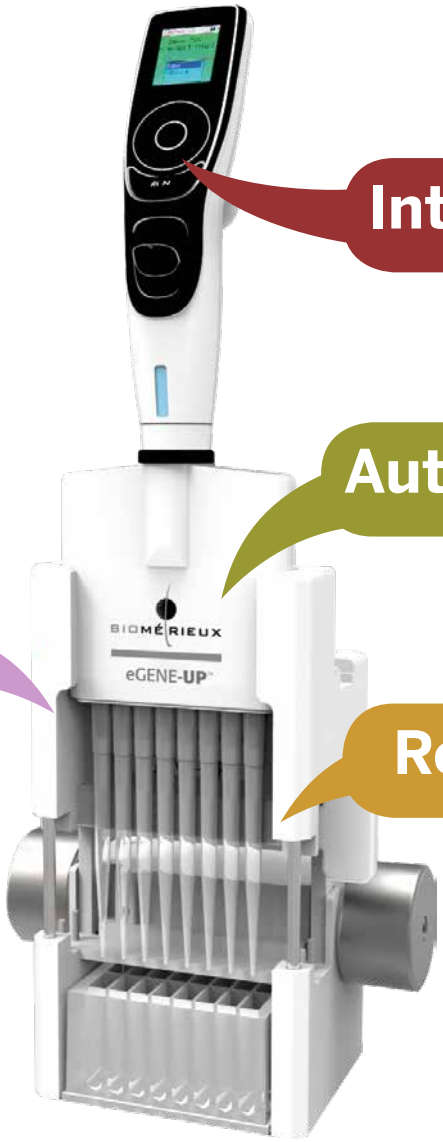
EGENE-UP®

Your Ultimate Semi-Automated Device for Lysis & RNA/DNA Purification

The perfect add-on to GENE-UP® RT-PCR

Complete integrated workflow for foodborne virus detection with ceeramTools® kits

Safe, rapid & efficient recovery of purified nucleic acids

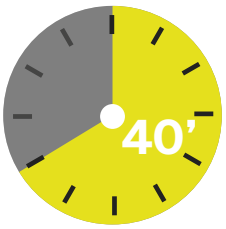


Integrated Software

Automated pipetting

8 Samples

Reduced footprint



Cost, Time and Labour saving

Manual extraction systems are labour intensive, with low reproducibility, and typically demand a strict attention to detail. The EGENE-UP® semi-automated extraction platform speeds up the whole process, increases repeatability and reproducibility, whilst providing superior ergonomics for the user.

PIONEERING DIAGNOSTICS

EGENE-UP®

Your next generation extraction platform

Performance

8 samples in less than 40 minutes can be processed with EGENE-UP®, an extraction performance equivalent to ISO15216 (Annex).

Conforms to the Standard Method

ISO15216: Microbiology of the food chain -- Horizontal method for determination of hepatitis A virus and norovirus using real-time RT-PCR -- Part 1: Method for quantification —Part 2: Method for qualitative detection

Annex (informative): RNA extraction using NucliSens®

Space Saving

On your bench, limited space will be needed
175 x 95 x h160 mm (max h200).
Can even be placed in a hood when space is scarce.

Ref	Product	Content
421367	Electronic Pipette for EGENE-UP®	Pipette
		Programming stand
421366	EGENE-UP® Stand	Stand & Holder
		2 x 96 grip tips 1250µl
		10 48 well Deepwell plates

Ref	Product	Content
200292	NucliSens® Lysis Buffer (Alternative to 280134)	48 x 2mL
280134	NucliSens® Lysis Buffer	(4 x) 1 L
280133	NucliSens® Magnetic Silica	24 x 1.2 mL = 28.8 mL
280130	NucliSens® Extraction Buffer 1	(4 x) 1 L
280131	NucliSens® Extraction Buffer 2	(4 x) 1 L
280132	NucliSens® Extraction Buffer 3	(4 x) 1 L

EASY with EGENE-UP

Prepare your microplate

Start your pipette, follow instructions

Nucleic Acids ready
for the next step on the
GENE-UP® RT-PCR thermal cycler

Get ready for your next
batch with a simple
cleaning process

Reagent lay-out in a Deepwell Plate

Deepwell line 6
NucliSens®
Extraction Buffer 3 (2 mL)

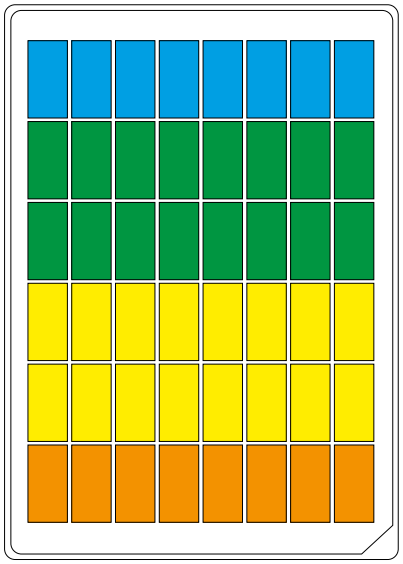
Deepwell line 5
NucliSens®
Extraction Buffer 2 (2 mL)

Deepwell line 4
NucliSens®
Extraction Buffer 2 (2 mL)

Deepwell line 3
NucliSens®
Extraction Buffer 1 (2 mL)

Deepwell line 2
NucliSens®
Extraction Buffer 1 (2 mL)

Deepwell line 1
Empty
(for sample + Lysis buffer+ Silica)



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