



Gastroenteritis: one of the most common diseases worldwide

Acute Gastroenteritis (AGE) is one of the main causes of morbidity and mortality worldwide, especially in children. It is estimated that around 525.000 children under 5 years die annually due to diarrhea worldwide.¹ Enteral viruses are the primary cause of gastroenteritis, including norovirus, rotavirus and adenovirus as the most important pathogens causing diarrhea.²

Like acute gastroenteritis caused by bacteria or parasites, gastroenteritis caused by viruses show similar clinical symptoms varying from asymptomatic infection to symptomatic infection with vomiting and severe diarrhea. In the worst case this can lead to death from dehydration. Viral infections can additionally include a short phase with mild fever. In contrast to bacterial and parasitic infections which could be contained in developing countries by improvement in sanitation and water supply conditions, cases of viral AGE still increase and therefore making a reliable identification of the causing pathogens crucial.²

Most cases of viral AGE are caused by norovirus.² This virus belongs to the family of *Caliciviridae* and is a single-stranded RNA (ssRNA) virus. Until today 7 genogroups with over 30 genotypes are known. Described as human pathogenic are genotypes of genogroup I (GI), genogroup II (GII) and IV (GGIV).³

Among children rotavirus is the major cause of AGE infection. Rotavirus belongs to the *Reoviridae* family of non-enveloped icosahedral double stranded RNA (dsRNA) viruses and are classified in seven serogroups A - G, whereby the viruses of serogroup A are of major epidemiologic importance.⁴

Adenoviruses are related to many different clinical presentations varying from respiratory infection to ocular, urinary and also gastrointestinal infection. After rotavirus, adenovirus is the second main important cause for AGE in children. Adenovirus belongs to the *Adenoviridae* family of non-enveloped icosahedral double stranded (dsDNA) viruses and can be differentiated in 56 serotypes which are classified into seven serogroups (A - G). Gastroenteritis is primarily caused by serotype 40 and 41 (serogroup F).^{5,6}

RIDA®GENE Viral Stool Panel III is a multiplex real-time RT-PCR for the direct qualitative detection and differentiation of norovirus, rotavirus and adenovirus 40/41 in human stool samples. It contains all necessary reagents and provides reliable results in

less than two hours. An early identification of viral caused gastroenteritis can decrease the risk of serious outcomes due to severe diarrhea and dehydration by initiated treatment.

RIDA®GENE Viral Stool Panel III Art. No. PG1335



- Multiplex real-time RT-PCR
- Simultaneous detection and differentiation of norovirus, rotavirus and adenovirus 40/41
- **Flexible** – the assay can be run on the commonly used real-time PCR instruments, such as the Mx3005P, LightCycler® 480II, LightCycler®480 z, ABI 7500, CFX96™ or Rotor-Gene Q
- **Reliable** – an included extraction control (Internal Control RNA, ICR) detects PCR inhibition, monitors reagent integrity and confirms that nucleic acid extraction was sufficient
- **Convenient** – qualitative results and differentiation of the pathogens for a quick and reliable diagnosis

Ordering information

Product	Description	Tests	Matrix	Art. No.
Virus	Real-time PCR			
RIDA®GENE Viral Stool Panel III	Multiplex real-time RT-PCR for the direct qualitative detection of norovirus, rotavirus and adenovirus 40/41 in human stool samples	100	Stool	PG1335



¹ WHO (2017): Diarrhoeal disease. Key facts. URL: <http://www.who.int/en/news-room/fact-sheets/detail/diarrhoeal-disease> (accessed 30.11.2018)

² Sidoti F, et al. Diagnosis of viral gastroenteritis: limits and potential of currently available procedures. JIDC 2015. 9(6):551-61.

³ Parra GJ, et al. Static and Evolving Norovirus Genotypes: Implications for Epidemiology and Immunity. PLoS Pathog 2017, 13(1): e1006136.

⁴ Robert Koch Institut. Rotaviren-Gastroenteritis. RKI-Ratgeber Infektionskrankheiten. Stand 31.07.2013. https://www.rki.de/DE/Content/Infekt/EpidBull/Merkblaetter/Ratgeber_Rotaviren.html;jsessionid=D381EC22661EBE5C847628E9368E3401.2_cid381#doc2374564bodyText8 (accessed 09.07.2018)

⁵ Robert Koch Institut. Keratoconjunctivitis epidemica und andere Konjunktividen durch Adenoviren. RKI-Ratgeber Infektionskrankheiten – Merkblätter für Ärzte 2010.

⁶ Robinson CM, et al. Molecular evolution of human species D adenoviruses. Infection, Genetics and Evolution 2011, 11: 1208-1217.