

## Prevalence of foodborne and zoonotic viral pathogens in raw cow milk samples

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### Abstract

Foodborne and zoonotic viral pathogens are responsible for substantial morbidity and mortality worldwide. These viruses can be transmitted through foods such as dairy products to humans and cause several acute and chronic diseases. This study aimed to investigate the prevalence and profile of different foodborne and zoonotic viruses in raw cow milk samples. We collected 492 raw cow milk samples from local dairy markets in Qazvin, Iran. Then, we evaluated the presence of hepatitis A virus, noroviruses, rotavirus, astrovirus, bovine leukaemia virus (BLV), and tick-borne encephalitis virus (TBEV) in samples using conventional and nested RT-PCR methods. We found that 34.95, 7.72, 25.81, 14.63, 66.86, 12.80, and 21.34% of raw milk samples were contaminated with norovirus GI, norovirus GII, hepatitis A virus, rotavirus, astrovirus, BLV and TBEV viruses, respectively. Interestingly, the samples collected from the city's south area revealed a higher prevalence of foodborne and zoonotic viruses. Astrovirus and its combination with norovirus GI were the most prevalent virus profiles. Also, the highest correlations were observed among the presence of rotavirus and hepatitis A viruses (0.36) and TBEV and norovirus GII (0.31). Considering the prevalence rate and virus profiles of different foodborne and zoonotic viruses in raw milk samples, hygiene practices and the pasteurization process are strongly suggested to be conducted throughout the cow milk production chain and in dairy industries to prevent infections with these pathogens.

**Keywords:** Foodborne virus; Prevalence rate; Raw cow milk; Zoonotic virus.