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contaminated through sewage galleries that flow directly in them, contributing with their contamination, and, consequently, exposing people who use these places, mainly susceptible children. These viruses are of great relevance in terms of public and environmental health, as they have an enormous potential spread due to their extended maintenance into the environment.

EV87 - ENVIRONMENTAL SURVEILLANCE OF HUMAN ADENOVIRUSES IN A WASTEWATER TREATMENT PLANT

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Sewage treatment may be insufficient for the complete elimination of pathogenic microorganisms such as enteric viruses. Nevertheless, the fecal coliforms (FC) are widely used as indicators for evaluating the quality of the effluent in wastewater treatment plant (WWTP). Thus, the return of the treated effluent to the nature can provide significant harm to public health, considering the importance of the waterborne pathogens. Human adenoviruses (HAdV) are associated with sporadic cases and outbreaks of gastroenteritis. These agents are present in various types of aquatic environments and also have been described as the most prevalent enteric viruses in sewage. In this environmental surveillance study we investigated the HAdV presence in four different points of the sewage treatment, evaluated the impact of sewage treatment with activated sludge in HAdV viral load and in FC counting in a WWTP from Juiz de Fora MG. For this purpose, raw sewage (n=24), primary sewage (n=24), sludge (n=24) and treated effluent samples (n=24) were collected bimonthly, between January and December 2014. The samples were concentrated using elution and skimmed milk flocculation procedure. Viral nucleic acids were extracted using a commercial kit and the viral load was determined using realtime PCR. The FC counting was determined monthly in each point. HAdV were detected in 85.4% (82/96) of the tested samples, with viral loads values ranging from 3.27E+02 to 2.42E+06 genome copies per milliliter. HAdV positivity rate in raw sewage, primary sewage, sludge and treated effluent

was 100%, 95.8%, 70.8% and 75%, respectively. Sewage treatment was able to reduce the FC counting into 2 logs in all samples analyzed. However, reductions of 12 logs in the HAdV viral load were observed in some, but not in all treated effluent samples. Although the secondary treatment was able to reduce the FC counting, it was not always efficient to HAdV removal in domestic sewage. Thus, more studies on the impact of sewage treatment in viral removal should be accomplished to establish new and effective wastewater management policies.

EV92 - ABSENCE OF HEPATITIS A VIRUS (HAV) IN AFFLUENT AND EFFLUENT SAMPLES FROM SEWAGE TREATMENT PLANTS LOCATED IN NOVO HAMBURGO, BRAZIL

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Hepatitis A virus (HAV) is responsible for the largest number of cases of acute viral hepatitis worldwide. HAV is a member of Hepatovirus genus, Picornaviridae family, and viral particles are composed by naked icosahedral capsids protecting a positive single stranded RNA genome. HAV particles may remain viable in environment and food for long periods. It is estimated that 1.4 million people in the world suffer annually for hepatitis A, whose prevalence is related to sanitation and socioeconomic conditions. HAV is detected sporadically in environmental matrices and only one sample out of 100 was positive for HAV in surface waters from Novo Hamburgo (pop. approximately 250,000 inhab.) in a survey conducted in 2015. The goal of the present work was evaluate if HAV is also rare in affluent and effluent samples from two sewage treatment plants (STPs) of Novo Hamburgo, through the polymerase chain reaction real time (RT-qPCR). In the period from November 10th 2015 to May 17th 2016, fortnightly collections were carried out from an STP running in parallel activated sludge and floating macrophytes, and another STP using a sequential treatment process consisting of UASB reactor, aerobic filter, activated sludge and anoxic reactor. Sixty six (n=66) samples were collected, being 22 raw sewage, 10 UASB reactor effluents, 12 effluents from activated sludge, 10 anoxic reactor residual waters and 12 floating macrophytes effluents. The samples were concentrated by ultracentrifugation method and

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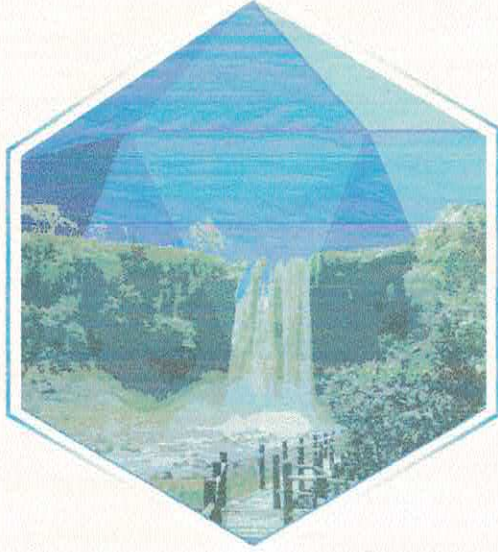
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Certificate

We hereby certify that the abstract entitled
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