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*Posters*

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**AQUEOUS TWO PHASE MICELLAR SYSTEMS (ATPMS)  
APPLIED TO SEPARATE VIRUS CONTAMINATION  
FROM AQUEOUS SOLUTION**

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**Abstract**

Water related diseases are one of the main concerns in health policies worldwide, which pressures environmental and public health policies to ensure microbiological safety. Simple separation techniques are essential to survey water source, but often lack in efficiency. Therefore, ATPMS are proposed as a separation technique to improve virus removal. Adenovirus was selected as virus model in our studies. Adenovirus suspension was obtained in Hep-2 cells in Minimum Essential Medium Eagle (MEM) at 95% humidity and 5% CO<sub>2</sub> for 48h to 72h after infection. Quantified HAdV-5 suspension was applied in ATPMS formed by Triton X-114/McIlvaine's buffer. Micellar systems were designed and prepared by using a factorial 2<sup>3</sup> randomized experimental design. Surfactant concentrations were 1 and 6% (w/w), McIlvaine buffer pH 5 and 7, and systems were kept at 29 and 33°C during 15h. Analysis of qPCR results demonstrated a positive effect on partition of TX-114 concentration and pH values, indicating that an increase in these variables produced a greater partition of HAd-5 to micellar poor phase. Partitioning values higher than 350 were achieved, and can still be improved by changing the system conditions by enhancing the excluded volume effect and reducing the hydrophobic interaction between virus and micelles. The results show that it is possible to concentrate Adenovirus in the micellar poor phase, and increase the separation by applying an ATPMS formed by higher TX-114 concentrations.

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