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## Virus-like particles and oncogenic virus (HPV-HCV) applications in biotechnology

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Human papillomavirus (HPV) is the most common sexually transmitted disease and have been described in the *Alphapapillomavirus* genus. Clinical samples (n=100) were collected with a cervical cytobrush immersed in 10Mm Tris and stored at -20□. The participants, who spontaneously accessed gynecology ambulatory, were randomly selected and interviewed about demographic and socio-economic characteristics. Women were considered eligible for enrolment if they were sexually active regardless of age, were not pregnant, had not been vaccinated against HPV and had no previous history of cervical lesions. Women with an immune suppressive disease were excluded from this study. Cervical samples were analyzed by PCR amplification of L1 ORF (450bp). HPV-DNA samples were detected by consensus (MY09/MY11), Nested PCR (GP5+/GP6+) and specific primers (HPV16/18/31/45). Swab samples DNA quality was amplified by β-globin PCR primers (PC04/GH20). Restriction fragment length polymorphism (RFLP) assay patterns for mucosal HPVs were used to genotyping of high-risk HPV types. The ultrastructural cell morphology in SiHa (HPV-16) and HeLa (HPV-18) cell lines (3x106 cells) detected by electron microscopy were also investigated. Papillomavirus can also be used as viral vectors in the gene therapy and new therapeutic targets. In addition, our project analyzed nucleotide sequence similarity of animal papillomavirus types to their closest related PV types and HPV sequences deposited in the Gen Bank, molecular and epidemiology study as support for the development of HPV recombinant vaccines and virus-like particles (VLP). Therefore, another virus studied was Hepatitis C Virus (HCV) that affects more than 70% of the estimated 170 million people inducing chronic lesions hepatitis leads to severe fibrosis and cirrhosis, hepatic failure, or hepatocellular carcinoma. New biotechnologies in molecular biology as chimeric vaccine bivalent production using conserved peptide are possible candidate peptide vaccine against HCV infection.

### Biography

Rachel Siqueira de Queiroz Simoes has completed her PhD in Tropical Medicine at Oswaldo Cruz Foundation. During her Postdoctoral studies, she worked with chimeric vaccines at Molecular Virology Laboratory and Human papillomavirus at Laboratory of Morphology and Viral Morphogenesis, Oswaldo Cruz Institute. As expertise in Biotechnology, her abilities in the field of biomedicine approaches a great experience at the Papillomavirus area. Her dedication to research resulted in a high productivity with publications in impact journals, courses and post-graduate activities. Recently, in 2017, she received honorable mention of best work during Advanced Symposium of Virology. And two consecutive times, she also received honorable mention at the HPV Congress in Rio de Janeiro 2015 and 2016. She is very requested an ad hoc reviewer of projects from funding agencies and journals. Currently, she is a Scientific Advisor and Organizer of the book of human and veterinary virology written two chapters.

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