I. INTRODUCTION

Cervical cancer is fourth most common cancer among women in the world and the second most commonly diagnosed cancer. It is also the third leading cause of cancer death among females. There were an estimated 527.600 new cervical cancer cases and 265.700 deaths worldwide in 2012. Almost 90% of cervical cancer deaths occurred in developing parts of the world and 144.400 (54%) of cervical cancer cases occurred in Asia (Torre, *et al.*, 2015).

In Indonesia, cervical cancer is the second most frequent cancer disease among women between 15 and 44 years old. In 2012-2013 cervical cancer ranks first in the most caused of women death with 98.692 cases (Kemenkes RI, 2015). Current estimates in 2017 indicate that every year 20.928 of 93.15 million women population are diagnosed with cervical cancer with the mortality rate of 9.498. About 87% of invasive cervical cancers are attributed to *Human papillomavirus* (HPV) type 16 or 18 (Information Centre on HPV and Cancer [ICO], 2017a; 2017b).

Meanwhile, in the neighbor country, Malaysia, current estimates in 2017 indicate that every year 2.145 of 11.55 million women population are diagnosed with cervical cancer and 621 dies from the disease. Cervical cancer also ranks as the second most frequent cancer among women between 15 and 44 years old in Malaysia. About 88.7% of invasive cervical cancers are also attributed to HPV type 16 and 18 (ICO, 2017a; 2017c). All of those data show that the cervical cancer cases that attributed to HPVs in Indonesia and Malaysia always increase.

With the increasing cases of cervical cancer in the world, this should also be accompanied by an enhancement research on how to overcome the disease. Epidemiology study shows that the main agent in cervical cancer is HPV is type 16, 18, 31, and 45 which includes the High-Risk types of HPV. Epidemiology also proved that HPV type 16 and 18 are the major course of cervical cancer (Morel *et al*., 2017).

Marlina *et al*. (2015) have been started the research with an identification and isolation of HPVs from cervical cancer patients in Dr M. Djamil Padang Hospital and Achmad Arifin Pekanbaru hospital. HPV type 16, 18, 45, and 52 were found with percentages of 28.5%, 40.4%, 7.1%, and 2.3% in the 42 samples (54%) of 72 samples that obtained from Formalin-fixed paraffin-embedded (FFPE), patients' cervical smears, and patients' cervical cancer fresh tissues. The study shows that HPV type 18 is the most dominant type compared to the other three types of the virus (Marlina, *et al*., 2016a).

The HPV study continues about the proteins that give a high risk for cervical cancer which are E5, E6, and E7. A research about molecular variation of E5 gene HPV from cervical cancer has been done which come into a result that stated the genetic relationship of E5 gene of HPV type 18 from samples taken from various source in West Sumatra and Riau is 100% close to Asian and Asian-American HPV isolate (Marlina, *et al*., 2016b). Another research about an application of designed Multiplex Polymerase Chain Reaction (MPCR) primer for E6 gene of HPV type 45 and 52 in cervical cancer patients indicated that there is a presence of gen E6 in

HPV type 45 from cervical cancer biopsy and cervical smear samples (Marlina, *et al*., 2015).

All of the researchers that have been done until now are a start to developing an effective therapeutic vaccine against HPV to overcome cervical cancer and to isolate DNA from cervical cancer samples in other geographical regions to screens out any possibility of new variations or types since HPV isolate variants can cause different mechanical disease, for the example the HPV type 18 from non-European variant is commonly found in an invasive cervical cancer (Chen, *et al*., 2011).

Polymerase Chain Reaction (PCR) is a molecular method that can be used to identify and characterize HPV in cervical cancer patients. PCR is a selective target amplification assay capable of exponential and reproducible increase in the HPV sequence present in biological specimens. Most laboratories use PCR assays, which utilize consensus primers and hence able to detect all mucosal HPV types (Garland and Sepehr, 2006).

The aim of this study is to be able to know whether both GP5+/GP6+ and MY09/MY11 primers do give the same percentages result in identifying HPV DNA in cervical cancer patients' isolate samples from Dr. M. Djamil Padang hospital, Achmad Arifin Pekanbaru hospital, and Serdang Hospital Malaysia or not and to know the differences that can be obtained from all samples after its comparison. So, the result of this study hopefully can be used for a supporting and additional data for a further research with Random Amplification of Polymorphic DNA (RAPD) method about the genomic polymorphisms of HPV between this neighboring countries and for the future research about HPV therapeutic vaccine.