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Thailand develops urine HPV paper-based DNA sensor testing kits for cervical cancer

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A simple, accurate, and fast urine test kit for cervical cancer



The Department of Chemistry, Faculty of Science, Chulalongkorn University's research team, in Thailand, have invented the urine HPV paper-based DNA sensor testing kits for cervical cancer that would allow a simpler and pain-free procedure that can be done frequently.

The urine HPV paper-based DNA sensor testing kits are easier and much faster than the Pap Smear. It eliminates the need to insert a tool and hold the vaginal walls open.

The less-than-500-Baht HPV Testing Kits are not for home use and must be administered by health centers and community hospitals.

According to the researchers, urine sample is mixed in a solution, then dropped onto the paper sensor, so the color change can be observed. The normal color is bright red, and it gets lighter according to the amount of the virus detected. Urine has fewer DNA materials than tissues, so a smartphone colorimeter app amplifying the DNA level is used alongside to make color change more visible. Test results show the test kit's high accuracy with a sensitivity of 85%, specificity of 78%, and reproducibility rate of 100%.