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IIT-K researchers design a phone app for studying cancer

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The new App takes pictures and counts the differently stained cells and gives the proliferation index in less than a minute.



A team of researchers at the Indian Institute of Technology (IIT) Kharagpur have developed a new smartphone App, SmartIHC-Analyser for helping in faster and more accurate evaluation of cancer after treatment.

The App analyses the expression of a protein marker called Ki-67 for determining an increase in the number of cancer cells. The App, now available for Android phones, analyses microscopic images of stained cancer tissue and in less than a minute tells if there is progression or regression of cancer cells post treatment.

The smart phone is fitted to the eye-piece of the microscope using a specially designed 3D-printed holder to take microscopic images of the cancer cells. To analyse proliferation, the colour variations in the stained cancer cells are studied. Cells positive for the protein marker will appear brown whereas the negative ones will appear blue. The new App takes pictures and counts the differently stained cells and gives the proliferation index in less than a minute.

The researchers analysed 30 cases of Ki-67-stained breast cancer tissues collected from Tata Medical Center, Kolkata and compared the results from the App with manual counting. Based on this comparison with the manual method, the App had nearly 97 per cent accuracy. Tata Medical Center has been collaborating on this study with IIT-K.

The researchers believe that health workers at public health centres can be trained to use the App thus enabling faster results.