

Extra-Cellular Acidity Analyzer (ECAA)

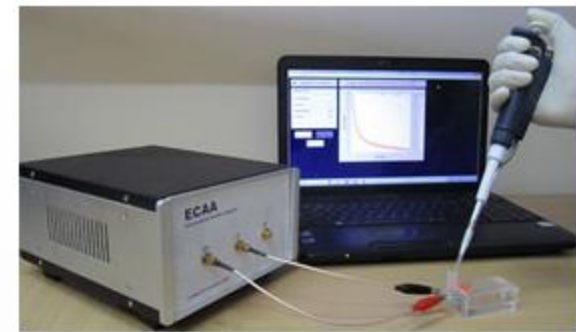
The Extra-Cellular Acidity Analyzer (ECAA) can measure extracellular acidity in the microenvironment of live cells in real time. Lactic acid production is the main contributor to extracellular acidification and is correlated to the rate of glycolysis. Due to abnormal metabolism and rapid growth, cancer cells are known to have high rate of glycolysis which results in higher extracellular acidity as compared to normal cells. To sense this basic difference between normal and cancer cells, we have developed a sensor to measure extracellular pH that can be used as an indirect tool to detect cancer. The extracellular acidity values of various cancer cell lines measured using ECAA match well with the values reported in literature using other methods. The sensor can also be used for evaluating efficacy of glycolysis inhibiting anti-cancer drugs for its application in screening of drug candidates.

SALIENT FEATURES

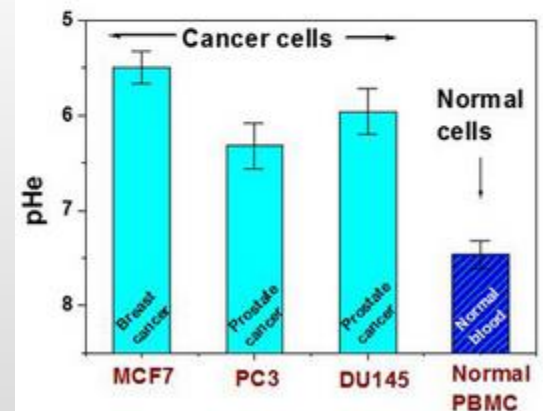
- ECAA enables real-time monitoring of extracellular acidity (pHe) and helps in measuring alterations in glucose metabolism and glycolytic function.
- The sensor is ideal for measuring extracellular acidity (pHe) values in the range of 1 to 8 with a resolution of 0.02 units.

APPLICATIONS

- In medical diagnostics industry for cancer detection based on difference in extracellular acidity of cancer cells and normal cells.
- In pharmaceutical industry for evaluation of glycolysis inhibiting drugs.
- In basic research on cancer biology for monitoring effect of various treatments and external stimuli on cellular glycolysis etc.



Sensor film with holder



pHe values measured for cancer cell lines and normal cells