

## Point-of-care systems for rapid DNA quantification in oncology

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### ABSTRACT

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The development of new powerful applications and the improvement in fabrication techniques are promising an explosive growth in lab-on-chip use in the upcoming future. As the demand reaches significant levels, the semiconductor industry may enter in the field, bringing its capability to produce complex devices in large volumes, high quality and low cost. The lab-on-chip concept, when applied to medicine, leads to the point-of-care concept, where simple, compact and cheap instruments allow diagnostic assays to be performed quickly by untrained personnel directly at the patient's side. In this paper, some practical and economical considerations are made to support the advantages of point-of-care testing. A series of promising technologies developed by STMicroelectronics on lab-on-chips is also presented, mature enough to enter in the common medical practice. The possible use of these techniques for cancer research, diagnosis and treatment are illustrated together with the benefits offered by their implementation in point-of-care testing.

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