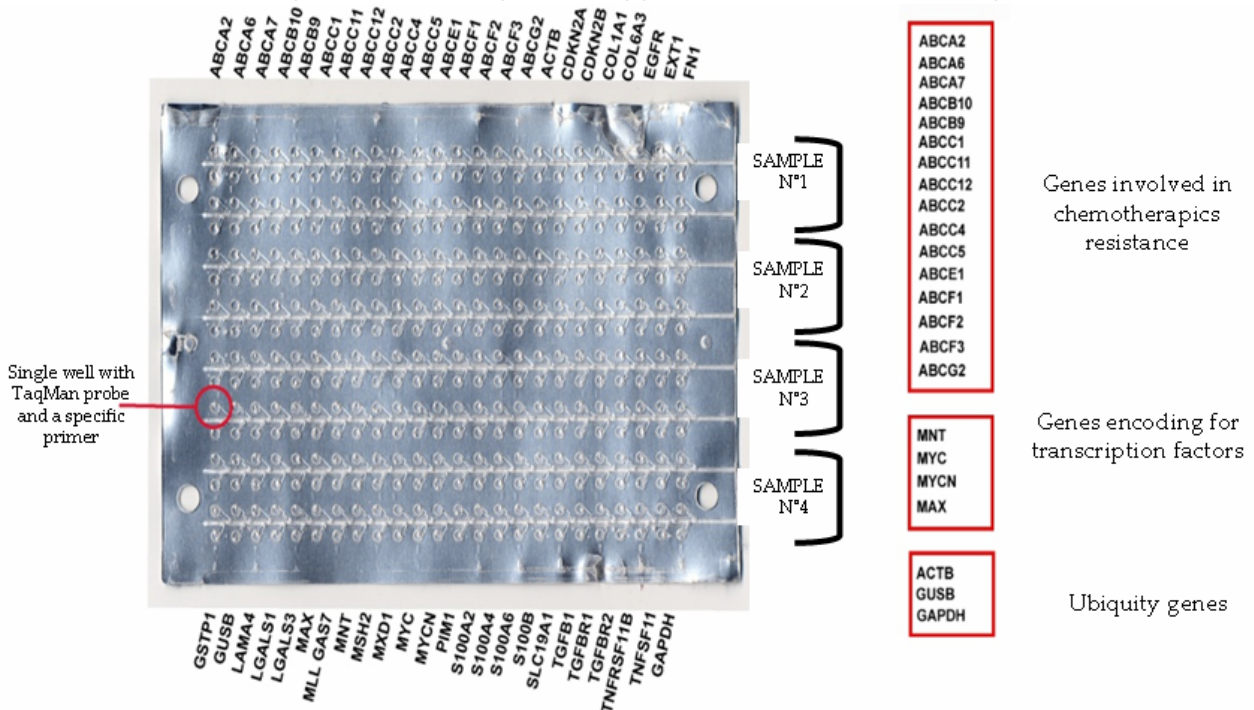


MICRO-CHIPS CARD to monitor the development of cancer in individual patients

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The University of Bologna developed a card able to characterize the expression of genes of interest. In particular the expression of membrane ABC transporters, because their alteration can change the export of drugs from the cell. The consequence of this anomaly is the basis of drug resistance to anti-neoplastic compounds. The card allows to monitor the development of cancer analyzing genes ABC regulation by Myc. Moreover, the characterization of oncogene Myc is important because it may contribute to the mechanisms of emergence of drug resistance.

Example of micro-chips card applied to four different samples



1. Description of the product

The combined expression of some ABC transporter genes could be the most important predictive marker for the prognosis in solid tumors (neuroblastomas, osteosarcomas) and haemopoietic tumors (lymphomas, leukemias).

The micro-chips card here presented contain as probes most of the validated Myc transcription factor target genes, including those coding for ABC transporters. The card is intended to be used for prognosis evaluation of neuroblastoma and other malignant cancers characterized by high level of expression of Myc transcription factors. Starting from the RNA extracted from a few tumor cells of a patient, it is possible to analyze the expression of oncogenes important for the development of pediatric cancers, such as

leukemias and neuroblastomas, and the genes responsible for drug resistance to these tumors.

Each of these cards can simultaneously analyze 4 samples of cells from the same patient or one sample of cells from 4 patients.

2. Innovative aspects of the product

This is the first card which regards the analysis of the expression of genes responsible for multiple resistance to chemotherapeutic agents.

3. Main advantages of the offer

The micro-chip card is a very accurate diagnostic test that can predict the spread of cells resistance to chemotherapeutic agents. Moreover it is possible to use it to develop treatment protocols designed to minimize the possibility of occurrence of drug resistant cells and well tolerated by the individual patient.

This product allows to discover and develop new drugs aimed at preventing the formation of resistant cells and thus make more effective anticancer therapies currently used.

4. Technology keywords

Micro-chips card, drug resistance, tumor development, anticancer therapies, personalized therapy.

5. Current stage of development

Developed and tested in laboratory.

Technical and scientific publications

Porro A, Haber M, Diolaiti D, Iraci N, Henderson M, Kwek C-K, Munoz MA, Xue C, Flemming CL, Smith J, Murray J, London WB, Buxton AB, Ashton LJ, Cohn SL, Schwab M, Marshall GM, Della Valle G, Perini G and Norris MD. 2008. A specific transcription signature of ABC transporter genes is dictated by Myc-family oncogenes: A powerful tool to predict clinical outcome. Submitted for publication.

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