Long non-coding RNA GAS5 and miR-126-3p as molecular biomarkers of response to sorafenib in human cancer cells.

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lncRNAs and microRNAs are implicated in several biological functions and their dysregulation is frequently found in cancer. To better understand the molecular mechanism of the multikinase inhibitor sorafenib, we profiled the expression of a panel of ncRNAs in a sorafenib-treated hepatocellular carcinoma (HCC) cell line. Among the most modulated, we found the dysregulation of the lncRNAs GAS5, HOTTIP and HOXA-AS2 and the miR-126-3p in HCC, renal and breast carcinoma cell lines.
The diagnostic performance of GAS5 and miR-126-3p was verified in solid and liquid biopsies from HCC patients. miR-126-3p was decreased in HCC tissues respect to their correspondent peri-tumoral tissues. The levels of circulating miR-126-3p and GAS5 were significantly higher and lower respectively, in HCC patients respect to healthy subjects. This study highlighted that GAS5 and miR-126-3p were involved in the response to sorafenib of different cancer cell types and they were good diagnostic biomarkers of HCC in liquid biopsies.

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