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A new isoform oh the znf217 oncogene: deciphering the functional impact and the prognostic value in breast cancer

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Breast cancer is the most frequently diagnosed cancer and represents the main cause of women death by cancer. Our group and others have shown that the ZNF217 candidate oncogene provides a selective advantage to cancer cells by inducing resistance to chemotherapy, in particular by interfering with survival pathways or by deregulating apoptotic signals. High expression levels of ZNF217 have also been associated with invasion/migration *in vitro* and metastases development *in vivo* in nude mice. Our group has reported that high levels of *ZNF217* mRNA represent a new biomarker for poor prognosis associated with shorter relapse-free survival in breast cancer. By classic PCR and further sequencing, we have found and validated the existence of a new ZNF217 isoform in a panel of breast tumors samples. We aimed at elucidating the impact that plays this new isoform in breast cancer, in comparison with that of ZNF217 wild-type (WT). We have cloned this ZNF217 variant sequence in a eukaryotic expression vector and MDA-MB-231 breast cancer cells were stably transfected with the ZNF217-WT or the ZNF217 isoform encoding plasmids. Ectopic expression of ZNF217 isoform or ZNF217-WT was validated by RT-qPCR in MDA-MB-231 transfected cells, and several cellular clones were established. We then aimed at investigating and comparing the phenotype displayed by ZNF217 isoform transfected cells in regards with ZNF217-WT transfected cells. Finally, we investigated by RT-qPCR the pattern of expression of ZNF217-WT and ZNF217 isoform in a set of 113 primary breast tumors samples.

Biography

Prof P.A. Cohen is Professor in Molecular Biology and Biotechnology in the University of Lyon, France since 2005. She is also Principal Investigator and manages a team in the CRCL Cancer Research Center of Lyon CRCL UMR INSERM 1052-CNRS 5286, France. She got a degree in Pharmacy (1991), a PhD in Biomedical Sciences (1995, Univ. Montpellier, France). She was Post-doctoral fellow in the Cancer Research Campaign Laboratories, University of Dundee, Scotland, U.K. (1996-98, Advisor: Prof. D.P. Lane, F.R.S.) and in Sanofi-Research company (Montpellier, France), Immuno-Oncology Department (1998-99). Currently, her projects are dedicated to breast cancer research: In vitro, in vivo, genomics and translational medicine approaches to decipher pharmacologic resistance to anticancer therapies, the deleterious role of the ZNF217 oncogene, the identification of new prognostic or predictive biomarkers, and the impact of environmental factors exposure on tumor progression. She got several honors such as Exceptional Class Professor Distinction and her research work has been awarded by many prizes. She is also committed in several national and international education programs and is frequently requested as external scientific referee for international scientific journals or committees.

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