ROLE OF THE IQGAP2 DEPENDING ON RAS SUBCELLULAR LOCALIZATION: IMPLICATIONS IN THYROID CANCER

Monte, E., Casar, B., and Crespo P.
Department of Molecular and Cellular Signalling, Instituto de Biomedicina y Biotecnología de Cantabria (IBBTEC), Santander, España.

ABSTRACT

Thyroid cancer is the most common endocrine malignancy worldwide. In 75% of the cases, it is related to mutation that activate the RAS-BRAF-MEK-ERK cascade, a well-known pathway related to cellular transformation, proliferation and tumour progression. The high frequency of altered RAS expression in this pathway results in the most important molecular changes in thyroid tumours, which are characterized by high aggressiveness and recurrence. RasA12V is the most frequent oncogenic RAS mutation in thyroid cancer. It is associated with high aggressiveness but also with a high rate of reduction in the production of thyroid hormones, implying a role of RasA12V in thyroid tumour progression.

Purpose of study

We have generated CRISPR/Cas9-generated knock-out mouse of RasV12 to study the effect of both the use of specific signalling and the consequence of genetic manipulation of RasV12 in thyroid tumours in vivo. We have used a panel of mouse models expressing RasV12 to study the effect of RasV12 expression in different cell lines and thyroid tumours in vivo.

Results

We have shown that RasV12 expression in thyroid tumours has a high impact on the survival of mice and increases their quality of life. We have also shown that RasV12 expression in thyroid tumours has a high impact on the survival of mice and increases their quality of life. We have also shown that RasV12 expression in thyroid tumours has a high impact on the survival of mice and increases their quality of life.