The cl2/dro1/ccdc80 null mice develop thyroid and ovarian neoplasias.

Leone V[1], Ferraro A[1], Schepis F[2], Federico A[1], Sepe R[1], Arra C[3], Langella C[1], Palma G[4], De Lorenzo C[2], Troncone G[5], Masciullo V[6], Scambia G[6], Fusco A[1], Pallante P[7].

Author information

Abstract

We have previously reported that the expression of the CL2/CCDC80 gene is downregulated in human papillary thyroid carcinomas, particularly in follicular variants. We have also reported that the restoration of CL2/CCDC80 expression reverted the malignant phenotype of thyroid carcinoma cell lines and that CL2/CCDC80 positively regulated E-cadherin expression, an ability that likely accounts for the role of the CL2/CCDC80 gene in thyroid cancer progression. In order to validate the tumour suppressor role of the CL2/CCDC80 gene in thyroid carcinogenesis we generated cl2/ccdc80 knock-out mice. We found that embryonic fibroblasts from cl2/ccdc80(-/-) mice showed higher proliferation rate and lower susceptibility to apoptosis. Furthermore, cl2/ccdc80(-/-) mice developed thyroid adenomas and ovarian carcinomas. Finally, ret/PTC1 transgenic mice crossed with the cl2/ccdc80 knock-out mice developed more aggressive thyroid carcinomas compared with those observed in the single ret/PTC1 transgenic mice. Together, these results indicate CL2/CCDC80 as a putative tumour suppressor gene in human thyroid carcinogenesis.

KEYWORDS:

Carcinoma; Knock-out mice; Ovary; Thyroid; cl2/dro1/ccdc80