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A review of driver genetic alterations in thyroid cancers

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Thyroid cancer is a frequent endocrine related malignancy with continuous increasing incidence. There has been moving development in understanding its molecular pathogenesis recently mainly through the explanation of the original role of several key signaling pathways and related molecular distributors. Central to these mechanisms are the genetic and epigenetic alterations in these pathways, such as mutation and DNA rearrangements. That does not mean, however, that all the somatic abnormalities here in a cancer genome have been involved in development of the cancer and just driver mutations are concerned in tumor initiation. By way of illustrations, MAPK pathway which is motivated by BRAF^{V600E} and RAS and RET / PTC rearrangements are suggesting driver genetic alterations in follicular derived thyroid cancers which are considered in this review.

Key Words: Thyroid cancer, BRAF^{V600E}, MAPK pathway, RET / PTC rearrangements, RAS mutations.

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