Ribosomopatias e o gene p53

The role of p53 in ribosomopathies.


Source

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Abstract

Impaired ribosome biogenesis is the underlying cause of the pathological conditions collectively known as ribosomopathies. Several hypotheses have been advanced to explain the mechanisms by which deficiencies in ribosome biogenesis interfere with developmental processes leading eventually to the emergence of these diseases. In recent years it has become clear that perturbation of this process triggers a cell-cycle checkpoint that, through activation of the tumor-suppressor p53, leads to cell-cycle arrest and apoptosis. Indeed, evidence is accumulating from studies in animal models that the unscheduled activation of p53 is responsible for perturbations in tissue homeostasis that cause the development of ribosomopathies such as Treacher-Collins syndrome (TCS) and 5q(-) syndrome. These findings imply that inhibition of p53, or better, of mechanisms that specifically lead to p53 activation in response to inhibition of ribosome biogenesis, could be targeted in the treatment of ribosomopathies where activation of p53 is shown to play a pathogenic role.

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