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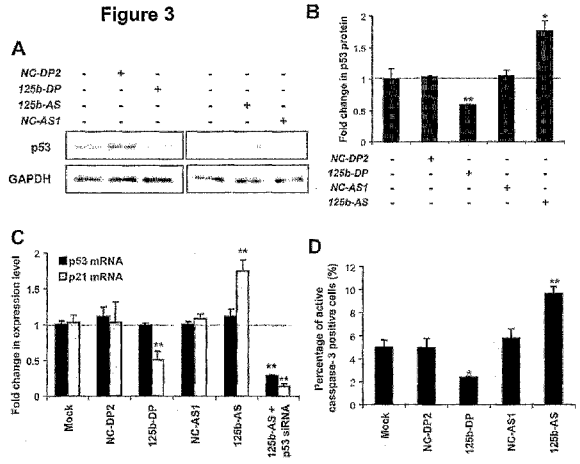
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(57) Abstract: Here we demonstrate that miR-125b, a brain-enriched microRNA, is a negative regulator of p53 in animals. miR-125b-mediated downregulation of p53 is dependent on the binding of miR-125b to a microRNA response element in the 39 untranslated region of p53 mRNA. Overexpression of miR-125b represses the endogenous level of p53 protein and suppresses apoptosis in cells. In contrast, knockdown of miR-125b elevates the level of p53 protein and induces apoptosis in cells. This phenotype can be rescued significantly by either an ablation of endogenous p53 function or ectopic expression of miR-125b in zebrafish. Ectopic expression of miR-125b suppresses the increase of p53 and stress-induced apoptosis. Together, our study demonstrates that miR-125b is an important negative regulator of p53 and p53-induced apoptosis during development and during the stress response.

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