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CARF is a multi-module regulator of cell proliferation and a molecular bridge between cellular senescence and carcinogenesis

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HIGHLIGHTS

- CARF (Collaborator of ARF) was first identified as an ARF (Alternative Reading Frame, p14ARF)-interacting protein that stabilizes p53-tumor suppressor protein in an ARF-dependent/-independent manner
- It acts as a transcriptional repressor of HDM2 that exerts a negative feedback on p53 by its proteasomal-mediated degradation.
- CARF-driven control over p53-HDM2-p21^{WAF1} axis was shown to regulate cell proliferative fates.
- Whereas cells with CARF-overexpression show growth arrest, its superexpression makes the cells pro-proliferating leading to malignant transformation.
- In the present review, we discuss how threshold level of CARF determines the fate of cells to either senescence or malignant transformation.

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