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NEW STRATEGIES FOR IMPROVING THE QUALITY OF LIFE OF CANCER SURVIVORS: REVERSIBLE P53 INHIBITION

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In recent years, with the improvement of cancer survival through more effective treatment, the emphasis has been in trying to minimize the side effects caused by chemo- and radiotherapy, to ensure that patients have the best quality of life throughout their cancer journey. The tumour suppressor *p53* is widely implicated in a broad range of cancers. Indeed, *p53* is either mutated or inactivated in the majority of cancers. Abundant evidence indicates that toxicity caused by DNA-damaging anticancer therapies in normal tissues is also mainly mediated by *p53*. *p53* accumulates in the cells shortly after anticancer challenges and acts as a nuclear transcription factor that modulates the expression of numerous p53-responsive genes (e.g. p^{21Waf1}, 14-3-3-σ, Mdm2, cyclin G, Bax). This initiates a cascade of events leading to massive programmed cell death in specific normal tissues during the systemic genotoxic stress associated with chemo- and radiotherapies. This makes *p53* a target for therapeutic suppression: an approach to reduce side effects associated with treatment of *p53*-deficient cancers. Here I summarize the role of *p53* and the possibilities of its manipulation to improve side effects during active treatment through survivorship.

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