

## Proline-Rich Polypeptide-1 Protects the Cells In Vitro from Genotoxic Effects of Mitomycin C

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**Abstract** A new proline-rich polypeptide (PRP-1) has been earlier shown to possess a broad spectrum of biological activities and seems to be a potential medicine. The potential genotoxic properties of PRP-1 and protective effect of PRP-1 against genotoxic action of Mitomycin C (MMC) were analyzed in details in the present work. DNA and chromosome damages were studied in KCL-22 cell line of human myeloid leukemia by the Comet assay and micronucleus induction test, respectively. The results suggest that DNA damages are, at least partly, transient and repairable. PRP-1 at the doses 0.5–2.0  $\mu$ g/ml does not possess genotoxic activity. Moreover, this peptide expresses both preventive and therapeutic effects against MMC-induced DNA damage. Pre-treatment of cells with PRP-1 also prevents the appearance of daughter cells bearing as heavy MMC-induced DNA/chromosome damages as MNs.

Thus, the polypeptide studied is able to protect the cells from genotoxic action of MMC. This defense includes not only DNA but also heritable chromosome damage in postmitotic cells. Possible mechanisms of PRP-1 protective action are discussed.

For reasons that are beyond the control of the authors and journal editors, the article titled “Proline-rich Polypeptide-1 Protects the Cells In Vitro from Genotoxic Effects of Mitomycin C” by R. M. Aroutiounian, G. G. Hovhannisyan, G. H. Gasparyan, K. S. Margaryan, D. N. Aroutiounian, N. K. Sarkissyan, A. A. Galoyan (DOI: [10.1007/s11064-009-0104-8](https://doi.org/10.1007/s11064-009-0104-8)) was published in the regular issue Vol. 35 issue 4 instead of this special issue, where it was originally scheduled to appear.