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# Glycophorin-A Mutations as a Window to Study Carcinogenesis

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**ABSTRACT** For risk assessment, it is necessary to evaluate the dose of human exposure to mutagens. Previous studies support the somatic mutation theory of carcinogenesis. It is therefore of great importance to have a simple mutation assay technique that enables screening of a large number of samples at low cost without much need for equipment inputs. Mutations at the human Glycophorin-A locus have been well documented in exposed populations and apart from providing lifetime dosimetry, it can also throw light on the condition of tumor suppressor genes whose integrity is of great value in the nature of carcinogenesis. Recently, it was thought that mutational mechanisms as that occurring at the human Glycophorin-A locus also can give rise to changes in tumor suppressor genes that are associated with oncogenes. They will reflect the probability of indication of tumor suppressor gene mutations. A study was conducted on control and samples from persons affected with an advanced stage of prostrate cancer. Glycophorin-A mutations were detected using the RS-1 assay. DNA from the same samples were prepared and were PCR amplified with the p53 gene at exons 6 and 7 and mutations looked at. Our results from the PCR amplified products matched perfectly with that of the results as obtained by the RS-1 assay. This proves that there is a correlation between between the Glycophorin-A mutations and mutations at the p53 gene and further makes the RS-1 assay a versatile technique for human health risk assessments.

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