CONCLUSIONS

1. The research work reiterates the usefulness of the GPA mutation assay as a valuable and reliable biodosimetric tool at the population level. With the theory of somatic cell mutations as predictors for carcinogenesis gaining importance, it is necessary to be equipped with fast and reliable detection methods and GPA mutations being stable and life-long indicators of an individual, this assay gains much more importance than other available mutation assays. Concurrent with the earlier findings, variant erythrocytes (those that express mutation) increase linearly with the absorbed dose and hence a good indicator for biodosimetry.

2. The simultaneous studies on radiotherapy exposed individuals by flowcytometric analysis and by the RS-1 assay showed similar dose responses and validate the usefulness of the RS-1 assay as a valuable and reliable biodosimetric technique that can readily be applied at a population level.

3. The development of the RS-1 assay gives us a simple, rapid and economical method by which human GPA mutations can be detected. With evidence of increased levels of accumulated mutations at the GPA locus by age and also in a host of other clinical conditions, RS-1 assay can be put to good use in the general health risk assessments of high-risk groups. With elevated levels of variant erythrocytes being evident in
cancerous conditions, RS-1 assay can be a detection method for earlier detection of carcinogenesis in humans.

4. The RS-1 assay can be suitably employed for routine and periodic monitoring of MN heterozygous individuals who are occupationally or otherwise considered as high-risk category. This gives the persons susceptibility to mutations, which in turn determine the general health status, and also predispositions to certain clinical states such as cancers.