

## Effect of irradiation

### a.) Introduction

Irradiation of paraffins by  $^{60}\text{Co}$   $\gamma$  has shown that products of irradiated n-paraffins of n-C<sub>20</sub>H<sub>42</sub> & n-C<sub>24</sub>H<sub>50</sub> are mainly crosslinking polymeric products by, and the main scission is scarce ( Sefuchi et al, 1990). The HA latex was irradiated by  $^{125}\text{Ce}$  to determine if the crosslinking of polyisoprene in HA latex would affect the immobilisation of the protein on to the solid and hence the assay performance.

### b.) Experimental methods

#### Irradiation of high ammonia latex

HA latex solution was placed in a container, and irradiated using Gammacell-1000 irradiator for different times interval to the dose required (100, 500, 1000, 2000 and 3000 rads ). The radioactive source containing Cesium-137. The irradiated HA latex was then coated on PP tube as described in section 2.22. The dried NR coated tube was prewashed five times with 1 ml of 0.1M HCl followed by five washes with 1 ml of distilled water. The irradiated and washed NR coated surface was then immobilised with HBsAg or anti-HBs, blocked with 50% NBCS and assay as described in section 2.2.

### c.) Results & discussion

The results showed that irradiation did not alter significantly the percent binding of  $^{125}\text{I}$  anti-HBs and  $^{125}\text{I}$  HBsAg by irradiated NR coated tube (without anti-HBs or HBsAg immobilisation). In addition, the specific binding ( with negative or positive control serum incubation ) as well as non-specific binding ( without control serum incubation) of  $^{125}\text{I}$  anti-HBs or  $^{125}\text{I}$  HBsAg in both HBsAg and anti-HBs assay also show no significant changes. In conclusion, irradiation by Gamma ray does not seem to change the binding  $^{125}\text{I}$  HBsAg or  $^{125}\text{I}$  anti-HBs of NR surface (with or without anti-HBs or HBsAg immobilisation). Since the above results indicated that irradiation has no significant effect on the binding of antigen or antibody on HA latex surface, further investigation on manipulating of the NR liquid phase by irradiation was not carried out.

#### References

- Seguchi, K., Arakawa, K., Tamura, N., Katsumura, Y., Hasyashi, N. and Tabata, Y. (1990) *Radiat. Phys. Chem.* **36** (3), 259-266