

## Development of $^{90}\text{Y}$ -Chitosan Complex for Radiosynovectomy

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**Abstract :** Rheumatoid arthritis is the most common autoimmune disease, leading to the destruction of the joints. The aim of this study was the preparation of  $^{90}\text{Y}$ -chitosan complex as a novel agent for radiosynovectomy. The complex was prepared in the diluted acetic acid solution. At the optimized condition, the radiochemical purity of higher than 99% was obtained by ITLC method on Whatman No. 1 and by using a mixture of methanol/water/acetic acid (4:4:2) as the mobile phase. The complex was stable in acidic media (pH=3) and its radiochemical purity was above 98% even after 48 hours. The biodistribution data in rats showed that there was no significant leakage of the injected activity even after 48 h. Considering all of the excellent features of the complex,  $^{90}\text{Y}$ -chitosan can be used to manipulate synovial inflammation effectively.

**Keywords :** chitosan, Y-90, radiosynovectomy, biodistribution

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