

Independent Study Title	Sodium <i>O</i> -carboxymethyl chitosan as a novel fixative for eau de cologne
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ABSTRACT

Sodium carboxymethyl chitosan (SCM-chitosan) was prepared by *O*-carboxymethylation reaction with monochloroacetic acid and use as a novel fixative for eau de cologne. SCM-chitosan is soluble in water but insoluble in ethyl alcohol, the optimum volume ratio between water and alcohol that still be able to soluble 0.1 percent of SCM-chitosan is 2:3. Water solubility of perfume compounds in eau de cologne affected the solubility of SCM-chitosan. The more water solubility of perfume compounds, the higher solubility of SCM-chitosan in formulation. Headspace analysis using gas chromatography is the method for evaluate fixative effect. SCM-chitosan has the significant fixative effect on *p*-cresyl methyl ether at concentration 10% in DPG eau de colonge. The fixative efficiency can rise to 92.19 percent at the temperature of 53 °C. However the fixative effect of SCM-chitosan on benzyl alcohol eau de colonge, ethyl acetoacetate eau de colonge and 94085 floral-fruity eau de cologne needs to future investigation due to the precipitation of the systems which might be cause by incompatibility between SCM-chitosan and the aroma material.

Keywords: Chitosan / carboxymethylation / Cologne / Fixative / Perfume