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## 海藻酸钠包覆的降钙素脂质体的制备和体内外黏附性质

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**中文摘要:**制备海藻酸钠包覆的脂质体,并对其黏膜黏附性质进行研究。采用薄膜水化法制备了包封率为(86.2±2.3)%的带正电荷的降钙素脂质体,并用不同黏度的海藻酸钠对脂质体进行包覆,包覆后的脂质体实现了电荷反转。通过黏蛋白-颗粒结合法、组织匀浆法和激光共聚焦显微镜法分别对海藻酸钠包覆脂质体的体内外黏附性质进行研究,黏蛋白-颗粒结合法研究表明:海藻酸钠可以与黏蛋白颗粒结合使其电位发生变化,组织匀浆法研究表明:海藻酸钠包覆脂质体能够增加肠道中荧光标记物的含量,并且随着海藻酸钠黏度的增加,肠道中荧光标记物的含量增大。激光共聚焦显微镜研究表明:高黏度的海藻酸钠包覆脂质体与未包覆脂质体相比表现出了更强的荧光强度,海藻酸钠包覆脂质体与未包覆脂质体相比具有良好的黏膜黏附特性,且这一特性随着海藻酸钠黏度的增加而增大。

**中文关键词:**[海藻酸钠](#) [降钙素脂质体](#) [黏膜黏附](#) [激光共聚焦](#)

## Preparation of sodium alginate coated calcitonin liposome and its mucoadhesive properties *in vitro* and *in vivo*

**Abstract:**The aim of this study was to prepare sodium alginate coated liposome containing calcitonin and to study its mucoadhesive properties *in vitro* and *in vivo*.The positive charged liposome containing calcitonin was prepared through thin film hydration with the entrapment efficiency of (86.2±2.3)%.The non-coated liposome was coated with sodium alginate solution with various viscosity to get the sodium alginate coated liposome and the Zeta potential of sodium alginate coated liposome switched to negative charge.The *in vitro* and *in vivo* mucoadhesive properties were evaluated by ss-mucin particle method,tissue homogenation and confocal laser scanning microscopy.It was shown that sodium alginate attached to the mucin particles changed the Zeta potential of them.Furthermore,the quantity of the fluorescent material in rat intestinal tissue increased when the liposome was coated with sodium alginate.With the increase of the viscosity of sodium alginate,the higher quantity of the fluorescent material was observed.The images of confocal laser scanning microscopy also showed that the sodium alginate coated liposome showed stronger intensity of fluorescence than non-coated liposome.In conclusion,sodium alginate coated liposome had better mucoadhesion than non-coated liposome and the viscosity of sodium alginate could increase the mucoadhesion.

**keywords:**[sodium alginate](#) [calcitonin loaded liposome](#) [mucoadhesion](#) [confocal laser scanning microscopy](#)

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