

**CHITOSAN-PEG: AN APPROACH FOR A SELF SUPRAMOLECULAR
DERIVATIVE**



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ABSTRACT

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A self supramolecular structured chitosan is designed and prepared by introducing polyethyleneglycol monomethylether onto low molecular weight chitosan chain. The packing structure of the product observed from wide angle X-ray diffraction demonstrates the dramatically change to amorphous like structure. The product obtained shows high swelling ability in water. The inclusion property of the product obtained for potassium ion is studied by UV-VIS spectrophotometer. The studies on inclusion phenomena clarify that the inclusion capacity for potassium ion of the product obtained is better than the low molecular weight chitosan.

บทคัดย่อ

ศศิประภา ผ่องยั้ง: ไคโตซาน-พอลิเอทรีนไกลคอลล: จุดประสงค์เพื่อสร้างอนุพันธ์ที่เป็นซูปราโมเลกุลในตัวเอง (Chitosan-PEG: An Approach for a Self Supramolecular Derivative) อ.ที่ปรึกษา: รศ.ดร.สุวบุญ จิระชาญชัย และ รศ.ดร.เดวิด ซี. มาร์ติน (Assoc. Prof. David C. Martin), 35 หน้า ISBN 974-17-2340-7

ไคโตซานที่มีโครงสร้างเป็นซูปราโมเลกุลในตัวเอง ได้ถูกออกแบบและสังเคราะห์โดยการผนวกพอลิเอทรีนไกลคอลลโมโนเมทริลอีเทอร์ลงบนสายโซ่ไคโตซาน การเปลี่ยนแปลงการเรียงตัวของผลิตภัณฑ์ศึกษาโดยเอกซ์เรย์ดิฟแฟรคชั่นสเปกโตรสโกปี แสดงถึงการเปลี่ยนแปลงอย่างชัดเจนเป็นโครงสร้างแบบอสัณฐาน เป็นผลให้ผลิตภัณฑ์มีความสามารถในการพองตัวในน้ำสูง คุณสมบัติการจับไอออนโพแทสเซียมของผลิตภัณฑ์ถูกศึกษาโดยยูวี-วิซิเบิลสเปกโตรโฟโตมิเตอร์ การศึกษาปรากฏการณ์อื่นคลุ้ันชี้ให้เห็นว่าผลิตภัณฑ์สามารถจับไอออนโพแทสเซียมได้ดีกว่าไคโตซานที่มีมวลโมเลกุลต่ำ

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