

**SYNTHESIS AND APPLICATION OF STRUCTURALLY
CONTROLLED BENZOXAZINE AS A HOST-GUEST COMPOUND**



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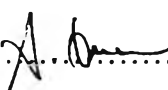
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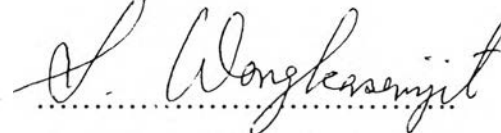
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ABSTRACT

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KEY WORDS: Benzoxazine Dimer/ Ion Extraction/ Host-Guest Compound/
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Three types of benzoxazine dimer derivatives were successfully prepared, i.e., 2-hydroxyl benzyl type (4), (5), and (6), 2-benzoyl benzyl type (7), (9), and (11), and 2-acetyl benzyl type (8), (10), and (12). In the case of 2-hydroxyl benzyl type, N,N-Bis (3,5-dimethyl-2-hydroxybenzyl) methylamine (5) exhibits the highest potassium picrate extraction for 31% and 58% at the host concentration of $7 \times 10^{-2} \text{M}$ and $7 \times 10^{-1} \text{M}$, respectively. The benzoyl benzyl and acetyl benzyl types compounds ((7)-(12)) show significant extraction ability up to 90%, for potassium picrate at the host concentration $7 \times 10^{-2} \text{M}$. Qualitative analysis by $^1\text{H-NMR}$ technique shows picrate salt at $\delta = 8.8$ ppm clarifying the stability of the complex formation.

บทคัดย่อ

ปวีณา เตชะกมลสุข : การสังเคราะห์เบนซอกซาซีนแบบควบคุมโครงสร้างและการประยุกต์สำหรับสมบัติการเป็นสารประกอบหลัก-รอง (Synthesis and Application Structurally Controlled Benzoxazine as a Host-Guest Compound) อ. ที่ปรึกษา : ดร. สุวบุญ จิรชาญชัย และ ศ. ฮัทสึโอะ อิชิดะ (Prof. Hatsuho Ishida), 44 หน้า ISBN 974-331-933-6

อนุพันธ์ของเบนซอกซาซีนไดเมอรัสามประเภทได้แก่ ประเภท 2-hydroxyl benzyl (4) (5) และ (6) ประเภท 2-benzoyl benzyl (7) (9) และ (11) ประเภท 2-acetyl benzyl (8) (10) และ (12) ได้ถูกสังเคราะห์ขึ้น การศึกษาสมบัติของสารประกอบหลัก-รอง โดยการจำแนกไอออนพบว่าในประเภทแรก N,N-Bis (3,5-dimethyl-2-hydroxybenzyl) methylamine (5) มีการจับโปแทสเซียมไอออนมากที่สุด โดยเปอร์เซ็นต์การจับเท่ากับ 31 และ 58 เปอร์เซ็นต์ที่ความเข้มข้นของสารประกอบหลัก 7×10^{-2} และ 7×10^{-1} โมลต่อลิตร ตามลำดับ ในสารประกอบประเภท 2-benzoyl benzyl และ 2-acetyl benzyl ((7)-(12)) พบว่าเปอร์เซ็นต์การจับโปแทสเซียมไอออนมากถึง 90 เปอร์เซ็นต์ที่ความเข้มข้นของสารประกอบหลัก 7×10^{-2} โมลต่อลิตร การศึกษาเชิงคุณภาพวิเคราะห์โดย $^1\text{H-NMR}$ พบพีคของโพแทสเซียมที่ chemical shift 8.8 ซึ่งพิสูจน์ได้ว่าการเกิดสารประกอบหลัก-รองของสารมีเสถียรภาพ.

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