สารเคมีจากทูนิเคต, *Didemnum sp.* ของไทย

นาย พงศธร หลิมศิริวงษ์

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CHEMICAL CONSTITUENTS FROM A THAI TUNICATE, *DIDEMNUM SP.*

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จากการแยกสกัดสารจากทูนิเคตไทย, *Didemnum sp.* สามารถแยกสารในกลุ่มนิวคลีโอไซด์ได้ 4 ชนิด ได้แก่ 4-amino-7-(5′-deoxyribos-1′β-yl)-5-iodopyrrolo[2,3-*d*]pyrimidine, 4-amino-7-(5′-deoxyribos-1′β-yl)-5-bromopyrrolo[2,3-*d*]pyrimidine, 4-amino-7-(5′-deoxyxylos-1′β-yl)-5-iodopyrrolo[2,3-*d*]pyrimidine และ 4-amino-7-(5′-deoxyxylos-1′β-yl)-5-bromopyrrolo[2,3-*d*]pyrimidine ซึ่งสารตัวสุดท้ายยังไม่เคยมีรายงานมาก่อน การพิสูจน์สูตรโครงสร้างของสารทั้ง 4 ชนิดนี้ทำโดยการวิเคราะห์ข้อมูลจากสเปคตรัมของ uv, ir, ms, ^{1}H และ ^{13}C nmr โดยเฉพาะอย่างยิ่งจากข้อมูลที่ได้จากเทคนิค NOE และ LCMS ร่วมกับการเปรียบเทียบข้อมูลกับสารชนิดอื่นที่มีโครงสร้างทางเคมีที่สัมพันธ์กัน

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Four halogenated pyrrolo[2,3-*d*]pyrimidine nucleosides were isolated from a Thai tunicate, *Didemnum sp.*: including three known compounds, 4-amino-7-(5′-deoxyribos-1′β-yl)-5-iodopyrrolo[2,3-*d*]pyrimidine, 4-amino-7-(5′-deoxyribos-1′β-yl)-5-bromopyrrolo[2,3-*d*] pyrimidine, and 4-amino-7-(5′-deoxyxylos-1′β-yl)-5-iodo-pyrrolo[2,3-*d*]pyrimidine and a new derivative, 4-amino-7-(5′-deoxyxylos-1′β-yl)-5-bromopyrrolo[2,3-*d*]pyrimidine. The structures and relative stereochemistry of the compounds were elucidated through extensive analyses of their uv, ir, ms, ^{1}H and ^{13}C nmr spectral data, especially NOE and LCMS techniques, as well as comparison with the data of related compounds.

ภาควิชา เภสัชเวท ลายมือชื่อนิสิต .....

สาขาวิชา เภสัชเวท ลายมือชื่ออาจารย์ที่ปรึกษา .....

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ABBREVIATIONS

$[\alpha]^{20}_{D}$	= specific rotation at 20 °C and sodium D line (589 nm)
ADP	= adenosine 5′ diphosphate
AMP	= adenosine 5′ monophosphate
ATP	= adenosine 5′ triphosphate
br d	= broad doublet
br s	= broad singlet
c	= concentration
°C	= degree celsius
^{13}C nmr	= carbon-13 nuclear magnetic resonance
$CDCl_3$	= deuterated chloroform
CH_2Cl_2	= dichloromethane
$CHCl_3$	= chloroform
cm	= centimeter
CTP	= cytidine 5′ diphosphate
δ	= chemical shift
1-D	= one dimensional
2-D	= two dimensional
d	= doublet
dq	= doublet of quartets
ε	= molar absorptivity
eV	= electron volt
g	= gram
^{1}H nmr	= proton nuclear magnetic resonance
HMBC	= proton-detected heteronuclear multiple bond coherence
HMQC	= proton-detected heteronuclear multiple quantum coherence
HPLC	= high performance liquid chromatography
HSQC	= proton-detected high sensitive quantum coherence
Hz	= hertz

IC_{50}	= 50% inhibition concentration
IR	= infrared
J	= coupling constant
kg	= kilogram
l	= liter
λ_{max}	= wavelength at maxima absorption
LD_{50}	= 50% lethality dose
M^+	= molecular ion
MeOH	= methanol
MHz	= megahertz
μg	= microgram
mg	= milligram
ml	= milliliter
mm	= millimeter
MS	= mass spectrum
ν_{max}	= wavenumber at maximum absorption
NA	= nutrient agar
nmr	= nuclear magnetic resonance
No.	= number
NOE	= nuclear overhauser effect
p	= pentet
ppm	= part per million
q	= quartet
s	= singlet
SDA	= sabouraud dextrose agar
sp.	= species
t	= triplet
TLC	= thin layer chromatography
TSA	= trypticase soy agar
UTP	= uridine triphosphate
uv	= ultraviolet