

Comprehensive Exploration of Bromophenol Derivatives: Promising Antibacterial Agents against SA and MRSA

Ta Ngoc Ly^{1,*}, Le My Lan¹, Ming-Yu Tsai², Yun-Wen Chen³, Hsin-Yi Hung^{2*}.

¹The University of Da Nang - University of Science and Technology, Danang 550000, Vietnam

²School of Pharmacy and Institute of Clinical Pharmacy and Pharmaceutical Sciences, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan

³Departments of Pharmacology, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan

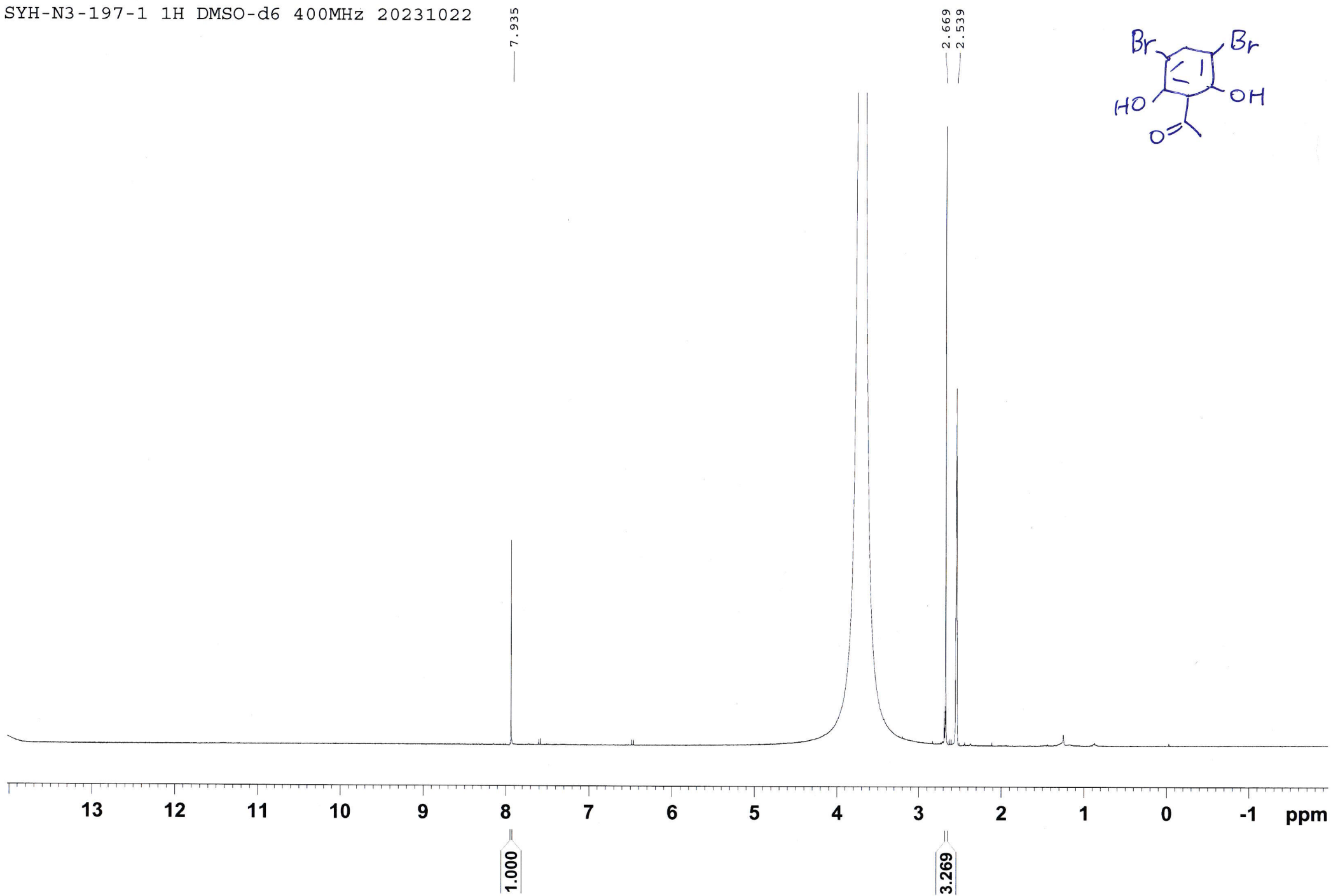
*Corresponding author: T.N. L. email: tnly@dut.udn.vn; H-Y. H. email: z10308005@email.ncku.edu.tw

Content

- S1. ¹H NMR (400 MHz, DMSO-*d*₆) spectrum of 3,5-dibromo-2,6-dihydroxyacetophenone (1)
- S2. ¹H NMR (400 MHz, DMSO-*d*₆) spectrum of 3-bromo-2,6-dihydroxyacetophenone (2)
- S3. ¹H NMR (400 MHz, DMSO-*d*₆) spectrum of 3,5-dibromo-2,4-dihydroxyacetophenone (3)
- S4. Determination of the diameter of zone inhibition
- S5. Determine the MIC value of antibiotics on PA
- S6. Determine the MIC value of antibiotics on SA

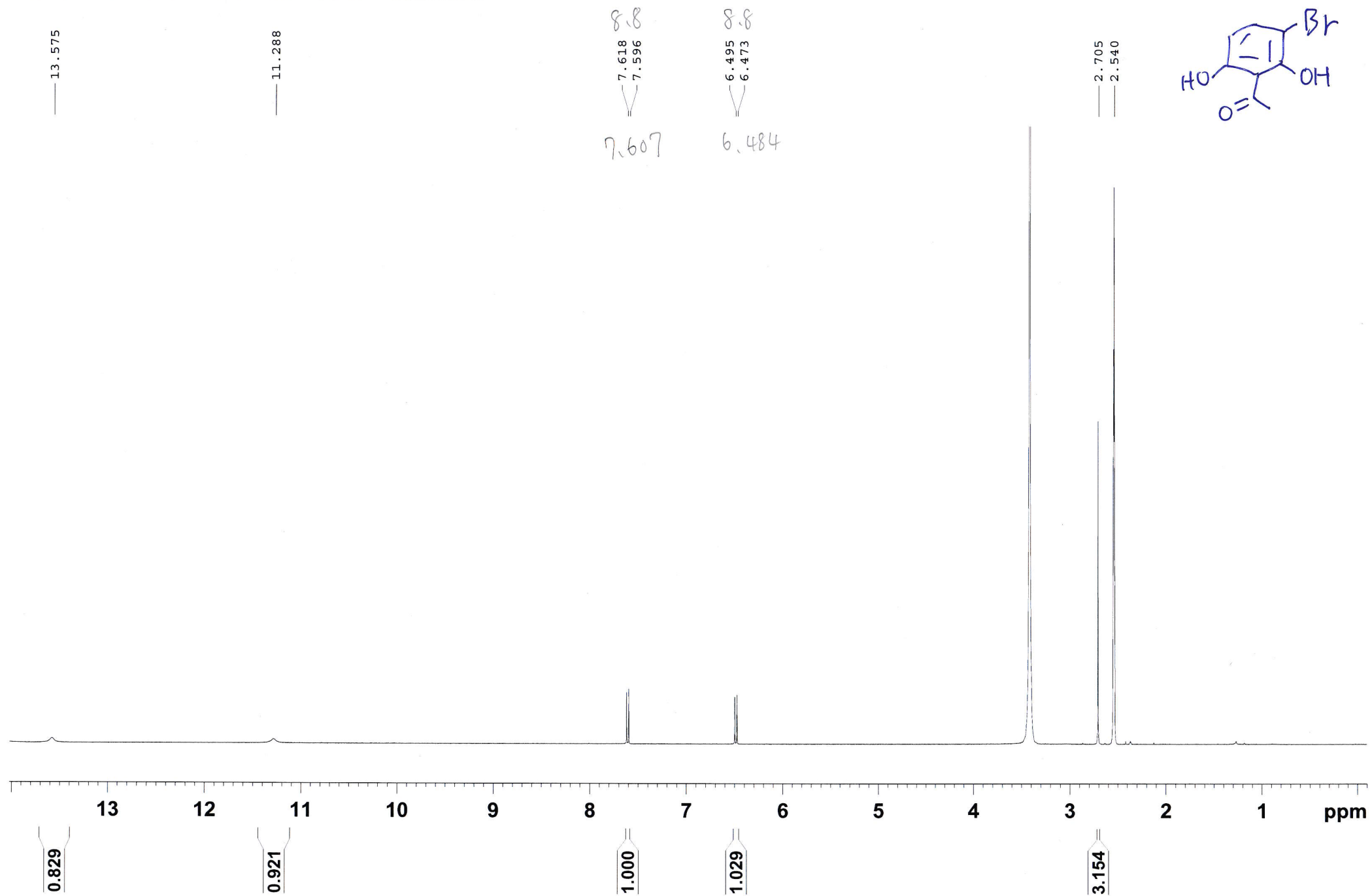
^1H NMR (400 MHz, $\text{DMSO}-d_6$) spectrum of 3,5-dibromo-2,6-dihydroxyacetophenone (1)

SYH-N3-197-1 ^1H DMSO- d_6 400MHz 20231022



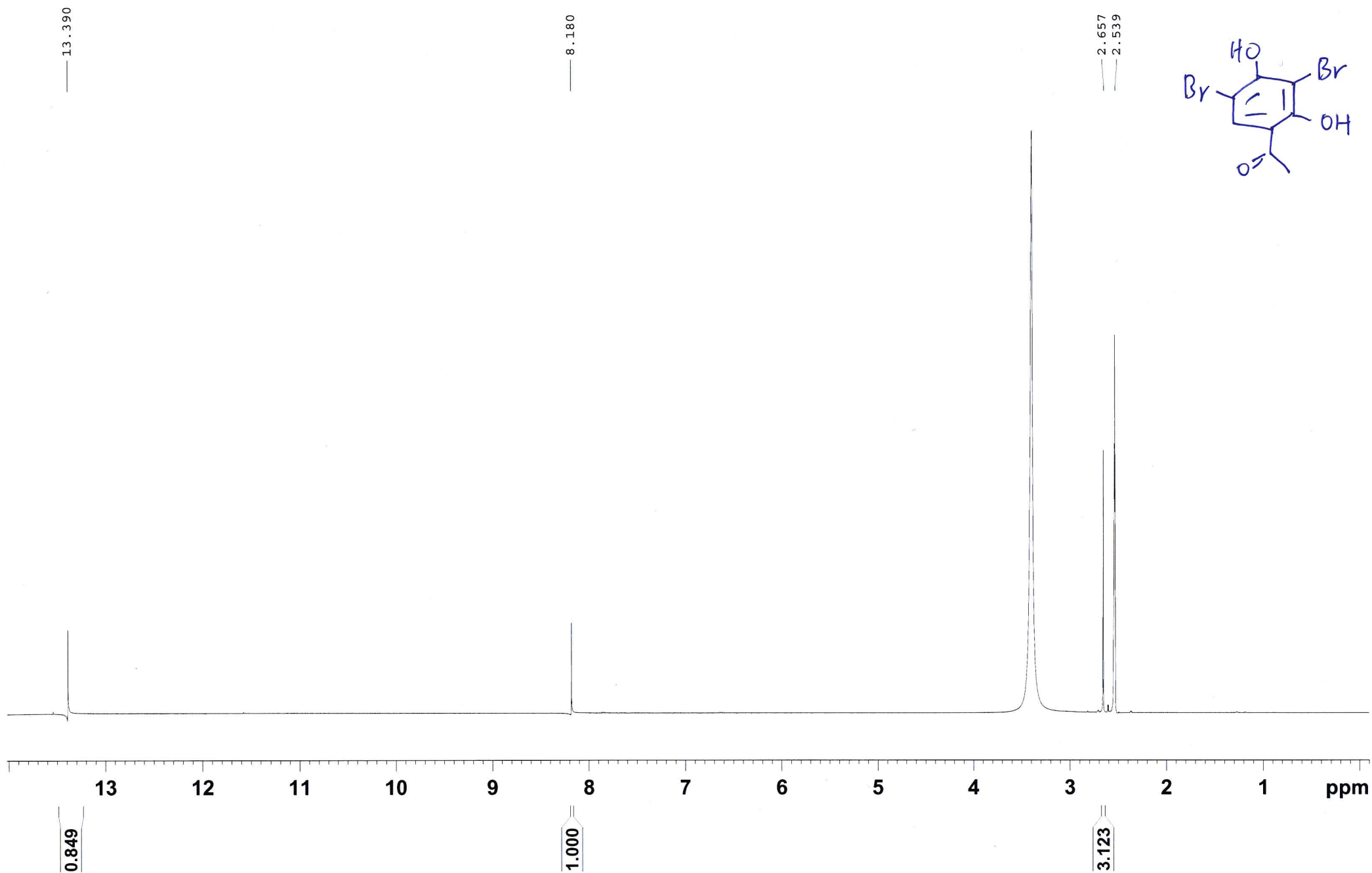
1H NMR (400 MHz, DMSO-d6) spectrum of 3-bromo-2,6-dihydroxyacetophenone (2)

SYH-N3-197-3 1H DMSO-d6 400MHz 20231022

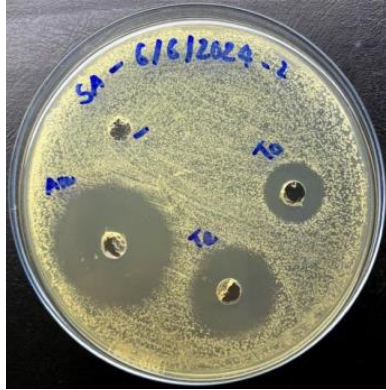


¹H NMR (400 MHz, DMSO-d₆) spectrum of 3,5-dibromo-2,4-dihydroxyacetophenone (3)

SYH-N3-199 1H DMSO-d₆ 400MHz 20231022



S4. Determine the diameter of zone inhibition



Diameter of zone inhibition on SA:

- Ampicillin: 14.5 ± 0.5 mm
- Tetracycline: 9.75 ± 0.25 mm
- Tobramycin: 5.1 ± 0.1 mm



Diameter of zone inhibition on MRSA:

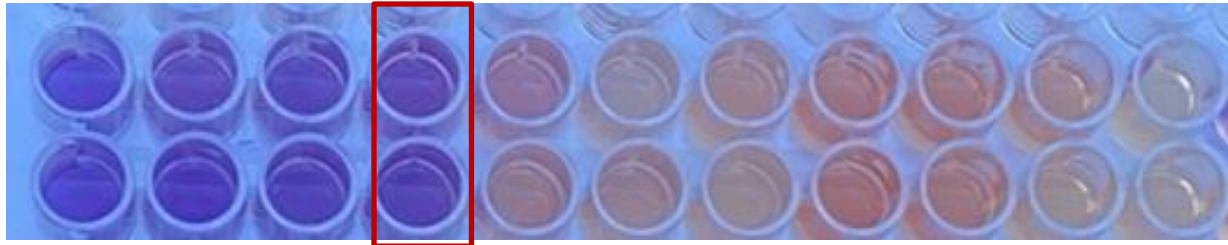
- Ampicillin: 15.5 ± 0.5 mm
- Tetracycline: 10.25 ± 0.75 mm
- Tobramycin: 5.5 ± 0.5 mm



Diameter of zone inhibition on PA:

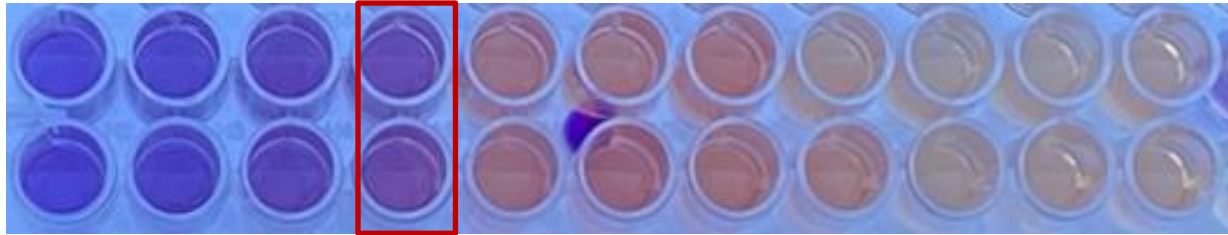
- Ampicillin: 0
- Tetracycline: 10.5 ± 0.5 mm
- Tobramycin: 5.5 ± 0.5 mm

S5. Determine the MIC value of antibiotics on PA



560 280 140 70 35 17.5 8.75 4.375 2.18 1.09 0.54

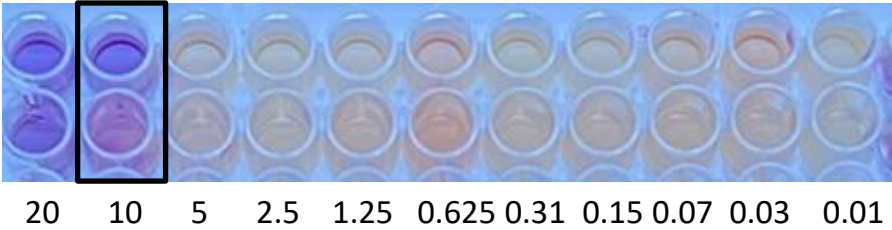
Tetracycline
MIC=70(µg/ml)



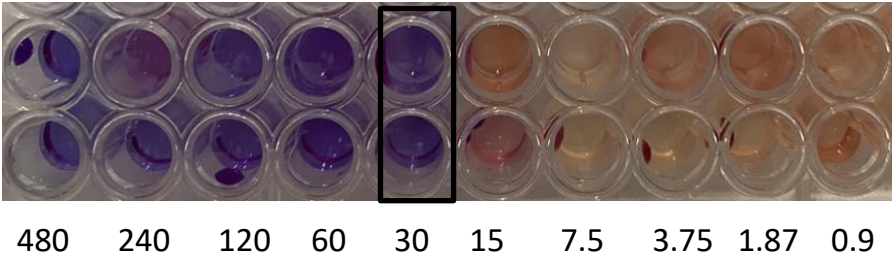
120 60 30 15 7.5 3.75 1.87 0.93 0.46 0.23 0.11

Tobramycin
MIC=15(µg/ml)

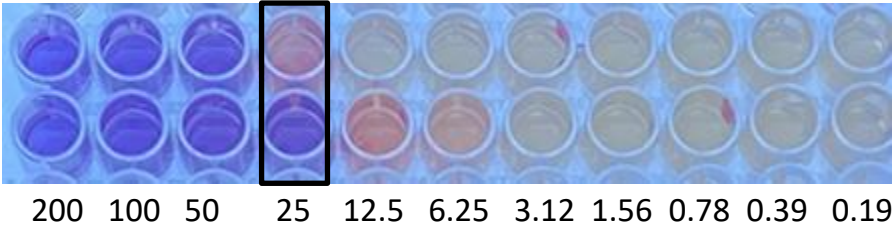
S6. Determine the MIC value of antibiotics on SA



Ampicillin
MIC= 10(µg/ml)



Tetracycline
MIC=30 (µg/ml)



Tobramycin
MIC= 25(µg/ml)