抗菌活性を示すゼルンボン誘導体(2*E*,6*E*,10*E*)-11-bromo-4,4,7-trimethylundeca-2,6,10-trienoic acidの合成検討

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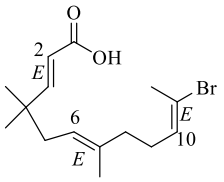
Synthetic study of (2*E*,6*E*,10*E*)-11-bromo-4,4,7-trimethyldodeca-2,6,10-trienoic acid showing antibacterial activity ([1]Graduate School of Agriculture, Kindai University) ○ Akane Taniguchi,[1] Gengo Kashiwazaki,[1] Miho Mori,[1] Takashi Kitayama [1]

(2*E*,6*E*,10*E*)-11-Bromo-4,4,7-trimethylundeca-2,6,10-trienoic acid (**1**) can be synthesized from zerumbone (Figure 1). It was revealed that **1** inhibits the autophosphorylation of the histidine kinase (WalK) in the two-component system WalK/WalR and consequently inhibits the growth of *Bacillus subtilis*[1,2]. In order to discuss the structure-activity relationships, it is necessary to prepare the analogues, and a couple of synthetic routes to **1** were examined. Using cross metathesis as a key reaction, we succeeded in synthesizing **1** by 11 steps, and the antibacterial activities of the obtained analogues were evaluated.

Keywords : Two-component system ; inhibitor ; Antibacterial activity

ゼルンボンから合成できる(2*E*,6*E*,10*E*)-11-Bromo-4,4,7-trimethylundeca-2,6,10-trienoic acid（**1**）は，細菌の情報伝達機構である二成分制御系 WalK/WalR のヒスチジンキナーゼ（WalK）の自己リン酸化を阻害し，かつ枯草菌の増殖を阻害することから[1,2]，新規抗菌剤開発のリード化合物としての役割に期待し，全合成研究を行った（Figure 1）。クロスメタセシス反応を鍵反応として，計 11 工程で **1** の合成に成功し，得られた中間体の抗菌活性評価を行った。



1

Figure 1. Structure of (2*E*,6*E*,10*E*)-11-Bromo-4,4,7-trimethylundeca-2,6,10-trienoic acid (**1**)

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