

Structural Reassignment of the Antibiotic A53868 Reveals a Tripeptide with an Unusual Amino Dehydrophosphonic Acid Monomethylester.

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The phosphonate antibiotic A53868 was isolated in 1984 and originally assigned as structure **1**, but was later changed to structure **2**. After our lab synthesized **2**, it was found that the structure was spectroscopically inconsistent with the isolated material. A combination of ^1H , ^{13}C , ^{31}P NMR and HRMS were used with non-labeled, ^{15}N - and $^{13}\text{C}^{15}\text{N}$ - labeled A53868 to identify the actual structure as **3**. The first total synthesis of **3** showed the structure to be spectroscopically identical to isolated A53868, which reveals unique structural characteristics and raises questions as to its biosynthesis and mode of action.

