



Synonym(s): 4-Amino-7-β-D-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine-5-carbonitrile, 9Cl. **Toyocamycin.** Cyanotubercidin. Unamycin B. Vengicide. E 212. Antibiotic 1037. Antibiotic E 212. Anhygroscopin B. Naritheracin

CAS Registry Number: 606-58-6

Molecular Formula: C₁₂H₁₃N₅O₄

Molecular Weight: 291.266

Accurate Mass: 291.096755

Percentage Composition: C 49.48%; H 4.50%; N 24.04%; O 21.97%

Biological Source: Isol. from *Streptomyces toyocaensis* and *Streptomyces fungicidicus*

Biological Use/Importance: Active against gram-positive organisms; shows some exp. antineoplastic activity

Physical Description: Needles or prisms + 1H₂O

Melting Point: Mp 243°

Optical Rotation: [α]_D²⁶ -55.6 (c, 1 in 0.1*M* HCl)

UV: [acid] $\lambda_{\max}$ 235 (ε 22100); 273 (ε 16300) (0.1*N* HCl) (Derep) [base] $\lambda_{\max}$ 235 (ε 11600); 280 (ε 16600) (0.1*N* NaOH) (Derep) [neutral] $\lambda_{\max}$ 207 (ε); 232 (ε 11060); 274 (sh) (ε); 278 (ε 15700); 289 (sh) (ε) (MeOH) (Derep)

Hazard & Toxicity: LD₅₀ (mus, orl) 8 mg/kg

Sigma: T8425

>>**Derivative:** Nitrile, 5'-*O*-α-D-glucopyranoside

Synonym(s): Toyocamycin 5'-α-D-glucopyranose

CAS Registry Number: 117456-79-8

Molecular Formula: C₁₈H₂₃N₅O₉

Molecular Weight: 453.408

Accurate Mass: 453.14958

Percentage Composition: C 47.68%; H 5.11%; N 15.45%; O 31.76%

Biological Source: From *Tolypothrix tenuis*

Biological Use/Importance: Cytotoxic and antifungal agent

Physical Description: Amorph.

Optical Rotation: [α]_D²⁵ +2.1 (c, 0.03 in H₂O)

Solubility: BERDY SOL: Sol. H₂O

UV: [neutral] $\lambda_{\max}$ 230 (ε 7400); 278 (ε 10000) (H₂O) (Derep) [neutral] $\lambda_{\max}$ 230 (ε 7400); 278 (ε 10000) (H₂O) (Berdy)

>>**Derivative:** 5'-Deoxy, nitrile

Synonym(s): 5'-Deoxytoyocamycin

CAS Registry Number: 65562-55-2

Molecular Formula: C₁₂H₁₃N₅O₃

Molecular Weight: 275.266

Accurate Mass: 275.10184

Percentage Composition: C 52.36%; H 4.76%; N 25.44%; O 17.44%

Biological Source: Prod. by *Streptomyces* sp. A14345

Physical Description: Cryst. + ½H₂O (H₂O)

Melting Point: Mp 187-188°

UV: [acid] $\lambda_{\max}$ 235 (ε 22100); 273 (ε 16300) (0.1*N* HCl) (Derep) [base] $\lambda_{\max}$ 235 (ε 11600); 280 (ε 16600) (0.1*N* NaOH) (Derep) [neutral] $\lambda_{\max}$ 207 (ε); 232 (ε 11060); 274 (sh) (ε); 278 (ε 15700); 289 (sh) (ε) (MeOH) (Derep)

References: