## Product Information Sheet

# P777
# Penicillin G, Sodium Salt

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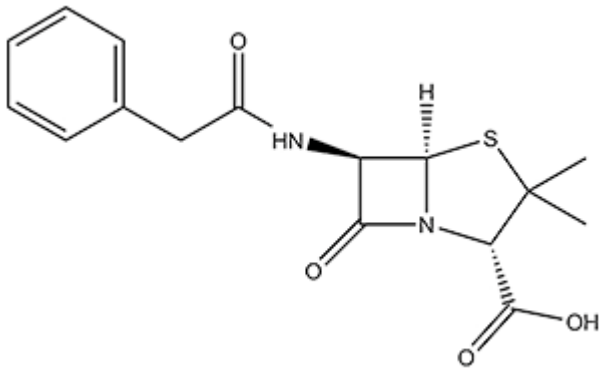
| Synonyms: | (2S,5R,6R)-3,3-Dimethyl-7-oxo-6-[(phenylacetyl)amino]-4-thia-1-azabicyclo-[3.2.0]heptane-2-carboxylic Acid, Sodium Salt; Benzylpenicillin. |
| CAS: | 69-57-8 |
| Formula: | $C_{16}H_{17}N_2O_4SNa$ |
| Mol. Weight: | 356.4 |



### Properties

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| Form: | Powder |
| Appearance: | White to Off-White Powder |
| Application: | Plant Tissue Culture Antibiotic |
| Solubility: | Soluble in Water |
| Storage Temp: | Room Temperature |
| Stock Solution Storage Temp: | -20 °C (It's recommended that stock solutions should be stored in small aliquots to prevent freeze-thaw effect) |
| Typical Working Concentration: | Varies by application. Concentration should be determined by end user. |
| Other Notes: | Average activity: 1603 µg/mg (see Certificate of Analysis for lot specific activity) |

### Application Notes

Pencillin G is a beta-lactam antibiotic with board spectrum of activity against Gram-positive bacteria, Gram-negative cocci and some bacteria, spirochaetes and actinomycetes.[2] Its mode of action is to inhibit the final stage of bacterial cell wall synthesis by binding to and inactivating the transpeptidase during the peptidoglycan production.[2,3]

Minimum inhibitory concentration (MIC) of penicillin G has been reported for many bacteria. MIC of penicillin G for *S. pneumonia and S. pyogenes* is 128 µg/mL[4], *B. subtilis* is 0.8 µg/mL, *S. aureus* is 0.34 µg/mL , *E. coli* is 0.56 µg/mL, *P. flourescens* is 1.34 µg/mL, *and H. pylori.* is 0.92 µg/mL.[5]

*Phyto*Technology Laboratories® also carries Penicillin G Solution at 10 mg/mL (Prod. No. P6767) which can be used with our *Phyto*Select Basal Medium (Prod. No. P6800) for the selection of *Xanthomonas campestris.*

Please Note: It is the sole responsibility of the purchaser to determine the appropriateness of this product for the specific plants that are being cultured and applications that are being used.

### References

1. *Merck* **13**, 7165
2. *Martindale: The Complete Drug Reference*, 35th ed., Paul S. Blake, Ed. (Royal Pharmaceutical Society, 2007), p. 189-190.
3. Yocum, Rogers R., David J. Waxman, James R. Rasmussen, and Jack L. Strominger. 1979. Mechanism of penicillin action: Penicillin and substrate bind covalently to the same active site serine in two bacterial D-alanine carboxypeptidases. *Proc. Natl. Acad. Sci. USA*.Vol 76(6):2730-2734.
4. Adiogo, Dieudonne, Valentine Ngum Ze, Fredeique Beyala, Hortense Gonsu Kamga, Marie Claire Okomo Assoumou, and Gerard Beyiha. 2013. Importance of Bacterial Resistance in *Streptococcus pneumonia and Streptococcus pyogenes* in the Center Region in Cameroon. *African Journal of Pathology and Microbiology*. 2:1-3
5. Chen, J.H., G.Y. Cui, J.Y. Liu, and R.X. Tan. 2003. Pinelloside, an antimicrobial cerebroside from *Pinellia ternata*. *Phytochemistry*. 64:903-906

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