

Product Information Sheet

B131 Bialaphos

Synonym: Bialaphos Sodium Salt, Bilanafos, Phosphinothricin Tripeptide (PTT), SF-1293
CAS: 71048-99-2
Formula: $C_{11}H_{21}N_3NaO_6P$
Molecular Wt: 345.27

Properties

Form: Powder
Appearance: Yellow to Orange
Application: Antibiotic, Selection Agent, Plant Growth Regulator
Solubility: Soluble in Water
Typical Working Concentration: Generally 1-3 mg/L for selection media, 10 mg/L and higher concentrations may be used but results are highly dependent upon plant tissue type. Optimal concentrations should be determined by the end user.
Storage Temp: -20–0 °C
Storage Temp of Stock Solution: -20–0 °C

Application Notes

Bialaphos is a tripeptide antibiotic with herbicidal properties that is employed in transformation research in many plant species that contain the *bar* gene for selection purposes.

Bialaphos has plant growth regulating properties at low concentrations and herbicidal properties at high concentrations. It was isolated from *Streptomyces viridochromogenes* (Kumada et al., 1988) and inhibits the function of the enzyme glutamine synthetase (GS) (Schwartz et al., 2005). Inhibition of GS leads to ammonia build up in plant cells and eventually death unless the *bar* or *pat* gene is present to confer resistance to bialaphos (Charudattan et al., 1996).

After bialaphos is taken into cells, it is converted into phosphinothricin through hydrolysis via the phosphinothricin acetyl transferase enzyme (Thompson et al., 1987).

References

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