



Bialaphos sodium - bar gene selective agent PRODUCT DATA SHEET

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Product Name:	Bialaphos sodium - bar gene selective agent
Product Number:	B013
CAS Number:	71048-99-2
Molecular Formula:	$C_{11}H_{21}N_3NaO_6P$
Molecular Weight:	345.27
Form:	Powder
Appearance:	Pale orange-colored powder
Source:	<i>Streptomyces Griseochromogenes</i>
Storage Conditions:	2-8°C
Description:	<p>Bialaphos sodium is a freely soluble herbicide synthesized by <i>Streptomyces hygroscopicus</i> and <i>Streptomyces viridochromeogenes</i>.</p> <p>This product is considered a dangerous good. Quantities above 1 g may be subject to additional shipping fees. Please contact us for specific questions.</p>
Mechanism of Action:	Bialaphos acts as a prodrug by separating into individual subunits of alanylalanine and phosphinothricin. Phosphinothricin is toxic to cells by accumulating ammonia and inhibiting photosynthesis and glutamine synthesis.
Microbiology Applications	Sobrero et al. used bialaphos sodium from TOKU-E to study its effects on oligopeptide transporters in a <i>Sinorhizobium meliloti hfq</i> mutant. " <u>Quantitative Proteomic Analysis of the Hfq-Regulon in Sinorhizobium meliloti.</u> "
Plant Biology Applications	Bialaphos sodium has successfully been used in major cereal species transformation including (wheat, rice, maize, barley, sorghum, oat and rye). The 'bar' gene was in these cases successfully incorporated in the plant genome, together with the gene of interest. When Bialaphos was applied after the transformation process only plants which were successfully transformed will be able to survive this antibiotic product application. (Aragão, 2002).
References:	<p>Aragão F.J.L. and Brasileiro A.C.M. Positive, negative and marker-free strategies for transgenic plant selection. Braz. J. Plant Physiol., 14(1):1-10, 2002.</p> <p>Imai, S., and et al. "Conversion of Bialaphos to Other Oligopeptides Containing Phosphinothricin by Streptomyces Hygroscopicus." <i>The Journal of Antibiotics</i> 44.9 (1991): 1006-012. www.ncbi.gov. Sept. 1994. Web. 5 Sept. 2012.</p>