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
Solubility:	freely soluble in water (500 mg/ml)
Source:	*Streptomyces griseochromogenes*
Storage Conditions:	2-8°C
Description:	Bialaphos sodium is a freely soluble herbicide synthesized by *Streptomyces hygroscopicus* and *Streptomyces viridochromeogenes*. It is commonly used for gene selection in cereals. This product is considered a dangerous good. Quantities above 1 g may be subject to additional shipping fees. Please contact us for specific questions.
Mechanism of Action:	Bialaphos acts as a prodrug by separating into individual subunits of alanylalanine and phosphinothricin. Phosphinothricin is toxic to cells by triggering the accumulation of ammonia, and inhibiting photosynthesis and glutamine synthesis.
Microbiology Applications	BIalaphos Sodium from TOKU-E was used to study its effects on oligopeptide transporters in a *Sinorhizobium meliloti* hfq mutant. (Sobrero et al, 2011)
Plant Biology Applications	Bialaphos Sodium is used in transformation of cereals including wheat, rice, maize, barley, sorghum, oat and rye. The *bar* gene is incorporated in the plant genome along with the gene of interest. When Bialaphos is applied, only plants which are successfully transformed survive (Aragão, 2002).

References:

Aragão FJL and Brasileiro ACM (2001) Positive, negative and marker-free strategies for transgenic plant selection. Braz. J. Plant Physiol. 14(1):1-10

Dedicova B, Bermudez C, Prias M, Zuniga E, Brondani C (2015) High-throughput transformation pipeline for a Brazilian japonica rice with *bar* gene selection. Protoplasma 252(4):1071-83 PMID 25488347

Imai, S et al (2012) Conversion of Bialaphos to other oligopeptides containing phosphinothricin by *Streptomyces Hygroscopicus*. J. Antibiotics 44 (9):1006-1012

Sobrero P et al (2012) Quantitative proteomic analysis of the Hfq-regulon in *Sinorhizobium meliloti.* PLoS One 7(10):e48494. PMID 23119037