HIGHLY PURIFIED BACTERIAL LIPOPOLYSACCHARIDES AND RELATED PRODUCTS

Bacterial lipopolysaccharides (LPS) have long been recognized as the active component of gram negative bacterial endotoxins.[1] These unique macromolecules have been extensively studied by investigators in many disciplines in efforts to elucidate and define relevant pathophysiological parameters of endotoxin shock, a profound life-threatening consequence of bacterial sepsis.[2] Lipopolysaccharides have generated intense interest as being among the most potent natural products capable of pluripotential immunostimulation manifested by the activation of host cells (e.g. B lymphocytes, macrophages) to functional differentiation.[3] Host cell activation by lipopolysaccharides produces a spectrum of hormone-active lymphokines and monokines, including interferons (α, ß, γ), interleukins 1 and 6, tumor necrosis factor, platelet activating factor and procoagulant tissue factor.[4] The documented capacity of lipopolysaccharides or their active lipid A component to initiate a variety of biochemical pathways (protein kinase C,[5] cAMP dependent protein kinase,[6] phosphatidyl inositol turnover,[7] arachidonate metabolism,[8] protein myristolation[9] and activation of G-proteins[10]) provides investigators with powerful molecular tools by which to study cellular activation mechanisms.

Smooth strain lipopolysaccharides from *E. coli* and *S. typhimurium* are isolated by a modification of the phenol extraction method of Westphal and Jann.[11] Smooth strain lipopolysaccharides are dispersable in aqueous solvents at concentrations of up to 5.0 mg/ml. Rough strain lipopolysaccharides from *E. coli* and *S. minnesota* are isolated by a modification of the phenol-chloroform-petroleum ether extraction method of Galanos, *et al.*[12] and are dispersable at a concentration of 1 mg/ml in 0.5% triethylamine. LPS preparations from List Biological Laboratories, Inc., have minimal nucleic acid and protein and are chemically characterized with respect to their phosphate and/or KDO (2-keto-3-deoxyoctonate) contents. Ultrapure LPS has been re-extracted by the method of Manthey and Vogel to eliminate residual protein contamination which may interfere with toll-like receptor studies.[13]

Our highest grade of lipopolysaccharide, Highly Purified Toxin, HPT™, is prepared by proprietary chromatographic methods that effectively remove traces of protein and nucleic acid while maintaining a consistently high concentration of endotoxin units. This LPS is useful for its high potency and freedom from measurable contaminating proteins. LPS Product No. 433 is prepared from the *E. coli* type that was used for the National Reference Endotoxin and for the Second International Standard for Endotoxin.[14,15]

List Biological Laboratories, Inc. also prepares lipid A (primarily monophosphoryl), a nontoxic fragment from *S. minnesota* R595 LPS, by a modification of the method of Morrison and Leive[16] and contains less than 0.2% KDO.

Each of the listed products is supplied as lyophilized powder. A detailed chemical analysis documenting purity accompanies each lot. **These products are intended for research purposes only and are not for use in humans**. **For further information, please contact List Biological Laboratories, Inc.**

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LIST BIOLOGICAL LABORATORIES, INC.

Ordering Information

Product No.	Lipopolysaccharides and Related Compounds	Size
201	LPS from *Escherichia coli* 0111:B4	5 mg
203	LPS from *Escherichia coli* 055:B5	5 mg
225	LPS from *Salmonella typhimurium*	5 mg
301	LPS from *Escherichia coli* J5 (Rc)	5 mg
302	LPS from *Escherichia coli* K12, D31m4 (Re)	5 mg
304	LPS from *Salmonella minnesota* R595 (Re)	5 mg
314	LPS from *Escherichia coli* K12, LCD25	1 mg
400	HPT™ LPS, highly purified from *Bordetella pertussis* 165	1 mg
401	Lipid A (primarily monophosphoryl) from *Salmonella minnesota* R595	1 mg
421	ULTRA PURE LPS from *Escherichia coli* 0111:B4	1 mg
423	ULTRA PURE LPS from *Escherichia coli* 055:B5	1 mg
433	HPT™ LPS, highly purified from *Escherichia coli* O113	1 mg
434	ULTRA PURE LPS from *Salmonella minnesota* R595 (Re)	1 mg

See how others have used List Labs' products on our citations page: https://www.listlabs.com/citations

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