

# TOXIN TECHNOLOGY, INC.

7165 Curtiss Ave. Sarasota, FL 34231-8012

Ph. (941) 925-2032 Fax (941) 925-2130 e-M [toxtech@att.net](mailto:toxtech@att.net)

## TOXINS AND DERIVATIVES <sup>1, 2, 3, 4\*</sup>

Highly Purified Staphylococcal Enterotoxins					
Name	Catalog #	Sizes	Name	Catalog #	Sizes
SEA	AT101	100 µg	SEE	ET404	100 µg
SEB	BT202	1 mg	SEH	SEH-1	1 mg
SEC1	CT111	5 mg	SEJ	SEJ-1	5 mg
SEC2	CT222	10 mg	SEK	SEK-1	10 mg
SEC3	CT333		TSST-1	TT606	
SED	DT303		Exfoliative Toxin A	ST101	
<b>Endotoxin Minimized Enterotoxins Available Upon Request (&lt; 1 EU/mg) Inquire</b>					

Recombinant Staphylococcal Enterotoxins (rSEs)					
rSEA	rAT101		rSED	rDT303	
rSEB	rBT202		rSEE	rET404	
rSEC-3	rCT333		rTSST-1	rTT606	

<sup>1</sup> **Toxin grades** are partially purified or highly purified. None are pure and all contain other substances that co-purify and can be detected using improved or very sensitive methods.

<sup>2</sup> **These reagents are intended for laboratory and research purposes only.** They are not intended for human or veterinary drug use.

<sup>3</sup> **Minimum U.S. order \$50.00, Min. International \$250.00.** Terms are net 30 days; U.S. dollars only.

<sup>4</sup> **The U.S. DOC** requires Export Licenses for ALL Staph & Shiga Toxins.

**Toxin Technology Assumes No Liability for the Use of these Products.**

Highly Purified Staphylococcal Enterotoxins Endotoxin Reduced < 5 EU per mg.					
Name	Catalog #				
SEA	AT101red		SEE	ET404red	
SEB	BT202red		SEH	SEH-1red	
SEC1	CT111red		SEJ	SEJ-1red	
SEC2	CT222red		SEK	SEK-1red	
SEC3	CT333red		TSST-1	TT606red	
SED	DT303red		Exfoliative Toxin A	ST101red	
<b>Further Endotoxin Reduction Available Upon Request (&lt; 1 EU/mg) Inquire</b>					

<b>Recombinant Staphylococcal Enterotoxins (rSEs)</b>					
rSEA	rAT101red		rSED	rDT303red	
rSEB	rBT202red		rSEE	rET404red	
rSEC-3	rCT333red		rTSST-1	rTT606red	
<b>Staphylococcal Enterotoxin Toxoids (SE-X)</b>					
SEA-X	AT101-X		SEB-X	BT202-X	
<b>Other Toxoids Can Be Prepared Upon Request</b>					

<b>Partially Purified Staphylococcal Enterotoxins</b>					
Name	Catalog #		Name	Catalog #	
SEA	AP101		SED	DP303	
SEB	BP202		SEE	EP404	
SEC's	CP1, 2, 3		TSST-1	TP606	
<b>Other Partially Purified Toxins can be Prepared on Request.</b>					

<b>Biotinylated Staphylococcal Enterotoxins</b>					
Name	Catalog #		Name	Catalog #	
SEA	AT101-B		SEE	ET404-B	
SEB	BT202-B		TSST-1	TT606-B	
SEC's	CT1, 2, 3-B		ExfoliativeToxin A	ST101-B	
SED	DT303-B				
<b>Other Products Can be Biotinylated on Request</b>					

<b>Staphylococcal Thermonuclease</b>			
Quantity	Catalog #'s	250 $\mu$ -molar units	SN250
5000 $\mu$ -molar units	SN5000	500 $\mu$ -molar units	SN500

<b>Staphylococcal Hemolysins</b>			
Description	Catalog #		Description
Alpha Hemolysin - partially purified	HP101	BHP1	Beta Hemolysin - partially purified
Alpha Hemolysin - highly purified	HT101	BHT1	Beta Hemolysin - highly purified

<b>Staphylococcal Peptidoglycan</b>		
Description	Catalog #	
Staphylococcal peptidoglycan	STPG1	

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## ANTISERA RABBIT

<b>Staphylococcal Antitoxins</b>				
Name	Catalog #	Name	Catalog #	
Anti - SEA	AS101	Anti - SED	DS303	
Anti - SEB	BS202	Anti - SEE	ES404	
Anti - SEC1	CS111	Anti - SEH	SEHS - 1	
Anti - SEC2	CS222	Anti - TSST-1	TS606	
Anti - SEC3	CS333	Anti - DNase	NS101	
Affinity Purified	IgG	IgG HRPO Conj.	IgG Biotinylated	
Name	Catalog # IgG	Catalog # HRPO	Catalog # Biotinylated	
Anti - SEA	LAI101	LAC101	BAC101	
Anti - SEB	LBI202	LBC202	BBC202	
Anti - SEC	LCI111	LCC111	BCC111	
Anti - SED	LDI303	LDC303	BDC303	
Anti - SEE	LEI404	LEC404	BEC404	
Anti - SEH	LSEHI-1	LSEHC-1	BHC-1	
Anti - TSST-1	LTI101	LTC101	BTC101	
Anti - DNase	LNI101	LNC101	BNC101	

<b>Normal Rabbit Serum Tested to be Free of Antibodies to SEA-E &amp; TSST-1</b>				
Cat. # NRS-5	5 mL		Cat. # NRS-10	10 mL

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## ANTISERA *SHEEP*

<b>Staphylococcal Antitoxins</b>					
Name	Catalog #	Name	Catalog #		
Anti - SEA	SAS101	Anti - SEE	SES404		
Anti - SEB	SBS202	Anti - TSST-1	STS606		
Anti - SEC1	SCS111	Anti - Exfoliative toxin A	SSS101		
Anti - SEC2	SCS222	Anti - Alpha-hemolysin	SHS101		
Anti - SEC3	SCS333	Anti - DNase	SNS101		
Anti - SED	SDS303				
Affinity Purified	IgG		IgG HRPO Conj.	IgG Biotinylated	
Name	Cat. #		Cat. #		Cat. #
Anti - SEA	SLAI101		SLAC101		SBAC101
Anti - SEB	SLBI202		SLBC202		SBBC202
Anti - SEC	SLCI111		SLCC111		SBCC111
Anti - SED	SLDI303		SLDC303		SBDC303
Anti - SEE	SLEI404		SLEC404		SBEC404
Anti - TSST-1	SLTI101		SLTC101		SBTC101
Anti - ET-A	SLSI505		SLSC505		SBSC505
Anti - DNase	SLNI101		SLNC101		SBNC101
Anti- $\alpha$ -Hemolysin	SLHI101		SLHC101		SBHC

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## **Murine Monoclonal Antibodies to the Staph Toxins**

MA108	Anti-SEA, $\gamma$ 2b, Xreacts with SEE. Overlaps Zn <sup>++</sup> MHC binding site, requires Zn <sup>++</sup> for binding. (Kappler & Marrack)	1mg
MBI202	Prepared against Staphylococcal Enterotoxin B IgG; Reactivity: Anti-SEB & SEC.	1mg
MB344	Anti-SEB, $\gamma$ 1, 6.0 nM, Not overlapping with the SEB MHC or TCR interaction site (Kappler & Marrack)	1mg
MB327	Anti-SEB, $\gamma$ 2b, 95 nM, Not overlapping with the SEB MHC or TCR interaction site (Kappler & Marrack)	1mg
MB2B33	Anti-SEB, $\gamma$ 1, 5.2 nM, Overlaps with the SEB MHC interaction site. (Kappler & Marrack)	1mg
MB87	Anti-SEB, $\gamma$ 1, 9.3 nM, Overlaps with the SEB TCR interaction site. (Kappler & Marrack)	1mg
MC165	Anti-SEC, $\gamma$ 1, Reacts with SEC <sub>1</sub> (1.5nM) > SEC <sub>3</sub> (20nM) > SEC <sub>2</sub> (75nM) (Kappler & Marrack)	1mg
MCTS-1	Prepared against Toxic Shock Syndrome Toxin-1 (Formerly Cat. # TS-2) IgG; Reactivity: Anti-TSST-1.	1mg

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### Streptococcal Reagents

Streptococcal pyrogenic exotoxins (SPE), Native		SPE, Recombinant (rSPE)	
Name	Catalog #	rSPE-A (Allele-1)	rPTA111
SPE-B	PTB222	rSPE-C	rPTC333

Streptococcal antitoxins		
Name	Catalog #	Source
Anti-SPE-A	PSA111	sheep
Anti-SPE-A	RPSA1	rabbit
Anti-SPE-B	PSB222	rabbit
Anti-SPE-C	PSC333	rabbit

  

Affinity Purified	IgG Rabbit	IgG HRPO Conjugate
Name	Catalog #	Catalog #
Anti - SPE-A	PAI111	PAC111
Anti - SPE-B	PBI222	PBC222
Anti - SPE-C	PCI333	PCC333

Streptococcal Peptidoglycan		
Description	Catalog #	Quantity
Streptococcal peptidoglycan	SRPG1	10 mg

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## **Shigatoxin (Verotoxin) Reagents**

### **Monoclonal Antibodies (Murine)**

STX1-9C9 1mg

Reference: Padhye, V.V. et al. 1989. J. Med. Microbiol. 30:219-226.

Reported Specificity: VT-1; A,A1,B, Neutralizing; VT-2; A,A1,  
Non-neutralizing. Isotype, IgG<sub>1</sub>

STX1-3C10 1mg

Reference: Same as above.

Reported Specificity: Same as above. Isotype, IgG<sub>1</sub>

STX1-10D11 1mg

Reference: Same as above.

Reported Specificity: VT-1; A,A1,B, Neutralizing; VT-2; A,A1,B,  
Non-neutralizing. Isotype, IgG<sub>2b</sub>

STX2-BB12 1mg

Reference: Pouch Downes, F. et al. 1988. Infection & Immunity. 56:1926-1933.

Reported Specificity: VT-2; B, Neutralizing. The clone was received as BB-12; some researchers report that it does not react the same as the original "BB12" MAb. Isotype, IgG<sub>1</sub>

STX1-13C4 1mg

Reference: Strockbine N.A. et al 1985. Infection & Immunity. 50:695-700.

Reported Specificity: VT-1; B, Neutralizing.

Note: This MAb can be purchased and used for research purposes only, it is Not to be used for any commercial purposes and is limited by the Licensee to a maximum of 5mg per purchase. Isotype, IgG<sub>1</sub> κ

STX2-11E10 1mg

Reference: Perera, L.F. et al. 1988. J. Clin. Microbiol. 26:2127-2131.

Reported Specificity: VT-2, Neutralizing(+/-)

Note: The same use conditions as STX1-13C4 apply to this MAb  
Isotype, IgG<sub>1</sub> κ

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**Shigatoxin Reagents, Continued**

**Pooled Monoclonal Antibodies**

STXPI-1     1mg     Pool of MAb 9C9, 3C10, 10D11 & BB12

STXPC-1     0.5mL   Pooled MAb IgG-HRPO Conjugate

BSTXPC-1   0.5mL   Pooled MAb IgG-Biotin Conjugate

**Shigatoxins (STX, Verotoxins, VT)**

STX-1 (Formerly, SLT-1) Partially Purified Shigatoxin-1\*     0.5 mg

STX-2 (Formerly, SLT-2) Partially Purified Shigatoxin-2\*     0.5 mg

\* At least  $10^7$  Verocytotoxic units/mg.

**Ricin Reagents**

RCAX-1     Ricin (RCA 60) Toxoid     1 mg

LRCAI-1     Anti-Ricin, Polyclonal Rabbit IgG     1 mg

LRCAC-1     Anti-Ricin IgG-HRPO     0.5 mL

**Abrin Reagents**

ABR-1     Abrin Toxin (Mixed Isomers)     1 mg

ABRX-1     Abrin Toxoid     1 mg

AABR-1     Anti-Abrin (Inquire)

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## ***Listeria Monocytogenes* typing antibodies**

### **General technical information**

These antibody reagents have been developed in rabbits and are specific for the somatic and flagellar antigens of *Listeria monocytogenes*. They may be used to identify and characterize different serotypes of *L. monocytogenes*. The reagents are sold in a lyophilized form and are under vacuum. In this evacuated, freeze-dried form, the antibodies are stable for several years when stored at - 20°C or lower.

To rehydrate the antibody reagents, it is recommended to add an equivalent volume of deionized water (usually 1 ml) to the vial, then aliquot the content to convenient working volumes and freeze any of the aliquots which will not be used within several days. The shelf life of the rehydrated reagent is approximately one week at 4 °C and one year at - 20 °C.

To prepare an aliquot of rehydrated reagent for use in the FDA-BAM serological typing procedure, dilute the reagent to the recommended dilution with PBS-Tween (0.01 M phosphate, 0.9 % NaCl, 0.05 % Tween-20, pH to 7.4) The diluted working reagent should be used within 8 hours.

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## ***Listeria monocytogenes* serotyping reagents:**

### **Somatic Groups**

#### **Serotype (O - antigens)**

anti - O1a (1)	cat. no. LMO1
anti - O1a (1,2)	cat. no. LMO12
anti - O3a (4)	cat. no. LMO3
anti - O4a (7,9)	cat. no. LMO4A
anti - O4b (6)	cat. no. LMO4B6
anti - O4b (5,6)	cat. no. LMO4B56
anti - O4d (8)	cat. no. LMO4D

### **Flagellar Groups**

#### **Flagellar antigen**

anti - HA	cat. no. LMHA
anti - HC	cat. no. LMHC
anti - HD	cat. no. LMHD

Sold in Individual 1 mL Units or in Set of 1 mL each.

The *Listeria monocytogenes* serotyping reagents are absorbed, hyper-immune rabbit serum products. These products are used in the FDA-BAM serotyping procedure

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## TEST SERVICES - DESCRIPTION AND PRICES

### Bacterial Toxins

#### Staphylococcal enterotoxins

- FDA-BAM Screen (no typing)
- Confirmation (ELISA-typing)
- Confirmation & Quantitation
- Confirmation (Microslide)

#### *Escherichia coli* toxicology/pathology

- verotoxins (shiga-like toxins)
  - ELISA (no typing)
  - ELISA (typing)
  - Tissue culture (TC)
- Labile enterotoxin (RPLA)
- invasiveness / adherence (TC)

#### Streptococcal Toxins

- pyrotoxins A,B, and C (ELISA)

#### *Bacillus cereus* toxins

- diarrheal enterotoxin (ELISA)
  - emetic enterotoxin (TC)
- Inquire

#### Clostridial toxins

- perfringens alpha toxin (enzyme)
- perfringens enterotoxin (RPLA)
- botulinal toxin screen (FDA)
- botulinal toxin typing (FDA)

### Miscellaneous Toxins

#### Paralytic shellfish toxin, i.e.,

- Saxitoxin (mouse)
- Saxitoxin (ELISA)

#### Endotoxin

- Qualitative (Limulus)
- Quantitative (Limulus)

### Mycotoxins

- Total aflatoxins, B's and G's
- Aflatoxin M1
- Zearalenone
- Vomitoxin
- T-2 toxin
- Fumonisin
- Ochratoxin A
- Sterigmatocystin
- Patulin

### Serotyping

- Salmonella
- Listeria
- *E. coli*

### Staphylococcal Exoproteins

- Toxic Shock Syndrome Toxins
- Serum sample (TSST-1 Titer)\*
- Paired sera, acute and convalescent (TSST-1Titer)\*
- isolate (toxin panel) A-E & TSST-1
- DNase (ELISA)
- Coagulase
- Mitogenicity (TC)
- Exfoliative Toxin A (ELISA)
- IgE Titer (SEs/TSST-1)\*
- IgG Titer (SEA,B,Cs,D,E&TSST-1)\*

### Toxicology

*In vivo* acute toxicology (mouse)

*In vitro* cytotoxicity with various cell lines

\*Serologies are for investigative purposes only, not for human diagnostic use.  
TOX TECH is NOT a CLIA LICENSED FACILITY.

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**References**

**Staphylococcal Enterotoxins:**

1. Bergdoll, M.S. and A.C.L. Wong Staphylococcal intoxications. In Foodborne Infections and Intoxications 3e. Chapter 14. (2006) Elsevier, Inc.
2. Bergdoll, M.S. Enterotoxins. In Staphylococci and Staphylococcal Infections, 2. (1983) Academic Press, London. **(SEA-E)**
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10. Jarraud, S. et al. *egc*, A Highly Preventive Operon of Enterotoxin Gene, Forms a Putative Nursery of Superantigens in *Staphylococcus aureus*. 2001. J. Immunology. **166**:669-677. An Erratum to this article was published in J. Immunology **166**:4259. **(SEM, N & O)**
11. Reiser, R.F. et al. Purification and Some Physicochemical Properties of Toxic-Shock-Toxin. (1983) Biochemistry. **22**: 3907-12. **(TSST-1)**
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13. Schlievert, P.M. et al. Identification and Characterization of an Exotoxin from *Staphylococcus aureus* Associated with Toxic-Shock Syndrome. (1981) Infect. Dis. **143**:509-516. [This the first reference to Pyrogenic Exotoxin C. **(PEC, aka SEF & TSST-1)**]
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**Staphylococcal Enterotoxins as *Superantigens*:**

1. Taranta, A. Lymphocyte Mitogens of Staphylococcal Origin. (1974) Ann. N.Y. Acad. Sci. **236**:362-375.
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**Streptococcal Pyrogenic Exotoxins as *Superantigens***

1. Imanishi, K. et al. Activation of Murine T-Cells by Streptococcal Pyrogenic Exotoxin Type A. Requirement for MHC Class II Molecules on Accessory Cells and Identification of V $\beta$  Elements in T-Cell Receptor of Toxin-reactive T-Cells. (1990) J. Immunol. **145**:3170-3176.
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3. McCormick, J.K. et al. Functional Characterization of Streptococcal Pyrogenic Exotoxin J, a Novel Superantigen. (2001) Infection and Immunity **69**:1381-1388.

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**Shiga Toxin & Monoclonal Antibodies to SLT-1 & 2**

1. Strockbine, N.A. et al. Characterization of Monoclonal Antibodies against Shiga-Like Toxin from *Escherichia coli*. 1985. Infection and Immunity. **50**:695-700.
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**Bioterrorism & Bacterial Toxins**

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