BRIAR PATCH BIOSCIENCES LLC

SAFETY DATA SHEET FOR ALL PRODUCTS

Version 5
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PRODUCT DESCRIPTIONS:

(1) **Hup1N, Hup2B and Hup1M** are IgG1 anti-protamine monoclonal antibodies that have been generated in mice. **Hup1N and Hup2B** recognize and bind to protamine P1 and P2 molecules, respectively, from many types of mammals. **Hup1M** is selective for human protamine P1 only. These antibodies are provided as affinity-purified reagents dissolved in PBS buffer, pH 7.4. **Toxicological Information**: There are no studies that indicate anti-protamine monoclonal antibodies are toxic or present a hazard.

MAb	isotype	antigen selectivity (ELISA)
BPB-2 A11	IgG1	P1 (human, mouse)
BPB-5 A2	IgG1	P1 (human, mouse)
BPB-6 F3	IgG1	P1 (human, mouse)
BPB-8 F5	IgG1	P1 (human, mouse)
BPB-9 F1	IgG1	P1 (human, mouse)
BPB-5 D1	IgG2a	P1 (human, mouse, bull) and P2 (mouse, stallion)
BPB-11 C1	IgG1	P1 (human, mouse, bull) and P2 (mouse, stallion (low))
BPB-20 D4	IgG2b	P1 (human, mouse, stallion, bull) and P2 (human, mouse, stallion (low))
BPB-26 B11	IgG2a	P1 (human)
BPB-17 B8	IgG2b	P2 (human)
BPB-26 F6	IgG2a	P2 (human, mouse)
BPB-18 C10	IgG1	native human P1/P2 mix only

(2) **BPB anti-protamine monoclonal antibodies** (see Table) have been generated in mice and are provided as affinity-purified reagents dissolved in PBS buffer, pH 7.4; they have similar utility in labeling P1/P2 as the Hup MAbs but provide a range of different isotypes and epitopes. **Toxicological Information**: There are no studies that indicate anti-protamine monoclonal antibodies are toxic or present a hazard.

(3) **Native protamines isolated from sperm of various mammalian species** are dissolved in 100 mM 2-mercaptoethanol, 1mM HCl and are provided at a concentration of 1.0 mg/ml. **Toxicological Information**: There is no data available on the toxicological effects of mammalian protamines. 2-mercaptoethanol at a low concentration of 0.1M (7.813 mg/ml) is used to maintain the cysteines in protamines in a reduced state). Because the volume of our products is < = 1ml, the amount of 2-mercaptoethanol (CAS# 60-24-2) used is well below the reported LD50 data for **DERMAL:** guinea pig: LD_{50} = 336 mg/kg and rabbit: LD_{50} = 112-224 mg/kg; **ORAL:** mouse: LD_{50} = 190 mg/kg and rat: LD_{50} = 244 mg/kg, **INHALATION:** mouse: LD_{50} = 13200 mg/m^3.

(4) **Synthetic human, mouse and stallion P1 and P2 protamines** are HPLC purified, dissolved in 100 mM 2-mercaptoethanol, 1mM HCl and provided at a concentration of 1.0 mg/ml. **Toxicological Information**: (See (3) above).

(5) **Synthetic peptides containing the protamine P1 and protamine P2 epitopes recognized by the antibodies Hup1N and Hup2B**, respectively. The peptides are HPLC purified, dissolved in 10 mM 2-mercaptoethanol and provided at a concentration of 2.0 mg/ml. **Toxicological Information**: (See (3) above).

COMPANY IDENTIFICATION

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CHEMICAL PROPERTIES

Boiling Point: Unknown **Melting Point:** Unknown **Specific Gravity:** Unknown **Vapor Pressure:** Unknown **Vapor Density:** Unknown **Evaporation Rate:** Unknown **Solubility in Water:** Unknown

Appearance and Odor

(1) Anti-protamine antibodies, Protamine proteins, Protamine-derived peptides and PBS buffer are odorless.

(2) 2-mercaptoethanol used to prevent crosslinking of cysteines in native and synthetic Protamine proteins and Protamine peptide epitopes has a disagreeable and choking odor characteristic of rotten eggs.

FIRE-FIGHTING PROCEDURES

Flashpoint: N/A **Flammable Limits:** LEL: not applicable, UEL: not applicable
Extinguishing Media: Use media appropriate for site conditions.
Unusual Fire & Explosion Hazards: None known.

REACTIVITY DATA

Stability/Incompatibility (see Useful Information - www.briarpatchbio.com):

(1) Hup and BPB Series Anti- Protamine Monoclonal Antibodies Avoid subjecting antibodies to repeated and frequent freeze/thaw cycles. Keep antibodies in current use in refrigerator.

(2) Protamines are highly basic proteins and **are not** soluble in SDS or high ionic strength solutions.

(3) **Hazardous Decomposition:** Both antibodies and protamines are stable molecules. They are not known to decompose into hazardous components.

GENERAL FIRST AID MEASURES

Eye Contact: If contact occurs, remove contact lenses if present. Rinse eyes thoroughly with water for at least 15 minutes, ensuring eyelids are held open. If irritation or redness persists, seek medical attention.

Skin Contact: Wash affected areas thoroughly with soap and water. If irritation develops or persists, consult a medical professional. Remove contaminated clothing immediately and ensure it is properly cleaned before reusing.

Ingestion: If swallowed, seek medical advice or contact a poison control center immediately. Provide details of the substance ingested if possible.