

## Product Specification Sheet

### Hepatitis Surface Antigen (HBsAg Antibodies and controls)

<b>Cat. HBA12-M</b>	Mouse monoclonal Anti-HBsAg IgG (clone 1), aff pure	<b>SIZE:</b> 1 mg
<b>Cat. HBA13-M</b>	Mouse monoclonal Anti-HBsAg IgG (clone 2), aff pure	<b>SIZE:</b> 1 mg
<b>Cat. HBA14-M</b>	Mouse monoclonal Anti-HBsAg IgG (clone 3), aff pure	<b>SIZE:</b> 1 mg

The discovery of Australian antigen by Blumberg et al., and its subsequent identification as the surface antigen of hepatitis B virus (HBsAg) represents a significant breakthrough in the understanding of the disease, serum hepatitis. Screening of blood donors for the presence of this antigen in serum has significantly reduced the incidence of hepatitis B in blood transfusion recipients.

The chemical composition of the HBsAg consists of lipid, carbohydrate and protein. The protein moiety of HBsAg contains several polypeptides, ranging from 23,000 to 97,000 molecular weight. The antigenic determinants on the protein moiety of the HBsAg determine the specific characteristics of the different serotypes of the virus and is the basis of the immunoassay. The antigenic reactivity of HBsAg is also associated with the surface of spherical or tubular particles. Other particles have also been observed, called Dane particles, which have two different antigenic sites: a superficial one, identifiable as HBsAg and an inner one, identifiable as the core. It has also been suggested that HBsAg is a fragment of the viral lipoprotein capsid and the Dane particle could be the real virus. HBsAg has an antigenic heterogeneity. The principal determinant is called a (a<sub>1</sub>, a<sub>2</sub>, a<sub>3</sub>) and is common to all the different serotypes of HBsAg. Two copies of subspecific determinants have also been identified, that is d/y (1<sub>1</sub>, 2<sub>y</sub>, 3<sub>y</sub>) and w/r which seems to be mutual. Therefore the following combinations are possible: adw, adr, ayw, ayr.

#### Source of Antigen and Antibodies

<b>Antigen</b>	Recombinant purified antigen grade HBsAg
<b>Ab Host/type</b>	Mouse, Polyclonal IgG (cat # HBA12-14-M) isotype IgG1
<b>Ab Format</b>	<b>Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)</b>
<b>-ve control</b>	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Recombinant HBsAg was expressed and purified (>95%) from E. coli. For Western blot +ve control (**Cat # HBSAg11-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **HBSAg11-C** for good visibility with antibody Cat # **HBA-A**. Store at -20°C in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **HBSAg11-C** solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly.

#### Form & Storage of Antibodies/Peptide Control

##### pure IgG

1 mg/ml or specified on the vial  
solution lyophilized powder

Supplied in **Buffer:** PBS+0.02% azide

**Reconstitute powder** in PBS at a desired concn

##### Storage

**Short-term:** unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

**Long-term:** at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20°C or below.

**Shipping:** 4°C for solutions and room temp for powder

#### Recommended Usage

**Western Blotting** (1:1K-5K 1-10 ug/ml for affinity pure using Chemiluminescence technique

**ELISA** (1:10K-1:100K; using 50-100 ng control peptide/well).

#HBA12-M recommended as capture antibody

#HBA13-M recommended as tracer antibody

**Histochemistry & Immunofluorescence:** no tested. we recommend the use of affinity purified antibody at 2-20 ug/ml.

#### Specificity & Cross-reactivity

Antibodies are specific for HbsAg with no reactivity with other viruses. Purified HBsAg protein is available for control studies by ELISA (#HBSAG19-R-1) or ready to use western blot control #HBSAG11-C.

**General References:** Rubin, E, 38 (13): 2665-2673 (1979); Kim R.D, Proc. Natl. Acad. Sci., USA 68: 1056 (1971); Kim, C.Y., J. Clin. Invest. 52: 1176-1186 (1973); C.W. Caldwell. Clin. Chim. Acta, 81: 305 (1977); C. Wolters, J. Infect. Dis. 136: 311 (1977); Magnus. L.O., J. Am. Med. Assoc. 231: 356-359 (1975); Darrell, L. J. of Biol. Chemistry. 257, 10414-10420 (1982).

\*This product is for in vitro research use only.

Related material available from ADI

<b>Catalog#</b>	<b>ProdDescription</b>
HBSAG15-N	Hepatitis B surface Antigen (HBsAg) - Ay (High Pure)
HBSAG16-N	Hepatitis B surface Antigen (HBsAg) - Ay (Partially Pure)
HBSAG17-N	Hepatitis B surface Antigen (HBsAg) - Ad (Partially Pure)
HBSAG18-N	Hepatitis B surface Antigen (HBsAg) - Ad (High Pure)
HBSAG19-R-1	Recombinant purified Hepatitis B surface Antigen (HBsAg)
<b>Goat-Poly</b>	<b>HBA11-A Anti-Hepatitis Surface Antigen</b>
(HBsAg) IgG, aff pure	
Mouse-Mono	HBA12-M Mouse anti-Hepatitis Surface Antigen
(HBsAg) (clone 1)	
	HBA25-N-100 Hepatitis Surface Antigen
	(HBsAg), Native, purified
HBA12-14-M	120716A

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