

# PRODUCT SPECIFICATION

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## HAH 002-01B Anti human Butyrylcholinesterase, biotinylated *mouse monoclonal antibody*

<b>Article No.</b>	96973																		
<b>Product Name</b>	HAH 002-01B Anti Human Butyrylcholinesterase, biotinylated																		
<b>Clone</b>	3E8																		
<b>Subclass</b>	IgG1 / kappa																		
<b>Description</b>	<p><b>Preparation:</b> Protein-A purified</p> <p><b>Concentration:</b> 1 mg/mL <math>\pm</math> 10%, based on <math>A_{280}</math>. See Certificate of Analysis for details.</p> <p><b>Solvent:</b> PBS, pH 7.2 – 7.4</p> <p><b>Storage:</b> -18 °C or colder</p>																		
<b>Antigen</b>	Butyrylcholinesterase (BChE, EC 3.1.1.8.) is a tetrameric glycoprotein with a molecular mass of 350 kDa, which consists of four subunits, each with a molecular mass of app. 90 kDa. BChE is synthesized in the liver, and is predominantly found in serum, liver and pancreas. BChE is the principal cocaine-metabolizing enzyme in human serum and serves as scavenger for toxic organophosphorus pesticides and nerve agents (1,2)																		
<b>Immunogen</b>	Butyrylcholinesterase purified from human plasma.																		
<b>Specificity</b>	HAH 002-01 reacts with BChE from human serum and plasma.																		
<b>EPI TOPE SPECIFICITY</b>	Not determined.																		
<b>Reactivity</b>	HAH 002-01 reacts with BChE from human serum in crossed immunoelectrophoresis and in sandwich ELISA using HAH 002-01 as capture antibody and biotinylated HAH 002-01 as detection antibody, respectively (3,4). Serum cholinesterase activity can be measured by enzyme antigen immunoassay (EAIA) using HAH 002-01 as catching antibody (5). HAH 002-01 can be used for purification of serum BChE by immunoaffinity chromatography (3) and for immunomagnetic separation of human BChE (6-8). HAH 002-01 has been used in a quantitative method that combines immunomagnetic separation of human BChE and liquid chromatograph tandem mass spectrometry for quantitative detection of organophosphate nerve agent exposure (6-8).																		
<b>Culture Medium</b>	Dulbecco's modified Eagle's medium with 10% fetal calf serum.																		
<b>Fusion Partner</b>	X63-Ag8.653.																		
<b>Immunization</b>	Female CF1xBalb/c F1 hybrid mice were immunized i.p. with immunogen adsorbed onto $Al(OH)_3$ .																		
<b>Application</b>	<table><thead><tr><th>Method</th><th>Usability</th><th>References</th></tr></thead><tbody><tr><td>EAIA</td><td>Yes</td><td>1,5</td></tr><tr><td>ELISA</td><td>Yes</td><td>3,4</td></tr><tr><td>Immunoaffinity Chromatography</td><td>Yes</td><td>3</td></tr><tr><td>Immunoblotting</td><td>No</td><td></td></tr><tr><td>Immunofluorescence</td><td>N.D..</td><td></td></tr></tbody></table>	Method	Usability	References	EAIA	Yes	1,5	ELISA	Yes	3,4	Immunoaffinity Chromatography	Yes	3	Immunoblotting	No		Immunofluorescence	N.D..	
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# HAH 002-01 Anti human Butyrylcholinesterase

*mouse monoclonal antibody*

## References

- 1) **Yang W, Pan Y, Zheng F, Cho H, Tai HH, Zhan CG.** Free-Energy Perturbation Simulation on Transition States and Redesign of Butyrylcholinesterase  
Biophys J. 2009 Mar 4; 96(5): 1931-1938.
- 2) **Masson P, Lockridge O.** Butyrylcholinesterase for protection from organophosphorus poisons; catalytic complexities and hysteretic behavior. Arch Biochem Biophys. 2010;15:494(2): 107.
- 3) **Brock A, Mortensen V, Rasmussen Loft AG, Nørgaard-Pedersen B.** Enzyme Immunoassay of Human Cholinesterase (EC 3.1.1.8) Comparison of immunoreactive substance concentration with catalytic activity concentration in randomly selected serum samples from healthy individuals. J Clin Chem Biochem. 1990;28(4):221-4.
- 4) **Aoki Y, Helzlsouer KJ, Strickland PT.** Arylesterase phenotype-specific positive association between arylesterase activity and cholinesterase specific activity in human serum. Int J Environ Res Public Health. 2014;11(2):1422-43.
- 5) **Hangaard J1, Whittaker M, Loft AG, Nørgaard-Pedersen B.** Quantification and phenotyping of serum cholinesterase by enzyme antigen immunoassay: methodological aspects and clinical applicability. Scand J Clin Lab Invest. 1991;51(4):349-58.
- 6) **Sporty JL1, Lemire SW, Jakubowski EM, Renner JA, Evans RA, Williams RF, Schmidt JG, van der Schans MJ, Noort D, Johnson RC.** Immunomagnetic separation and quantification of butyrylcholinesterase nerve agent adducts in human serum. Anal Chem. 2010;82(15):6593-600.

## Conditions

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