

## Capsid protein, Hepatitis B Virus (His)

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| Cat. No.:         | HY-P74354                                      |
| Synonyms:         | Capsid protein; Core antigen; C protein; HBcAg |
| Species:          | Virus  |
| Source:           | E. coli  |
| Accession:        | P03146-1 (M1-V149)                             |
| Gene ID:          | 944568   |
| Molecular Weight: | Approximately 17.67 kDa                        |

### PROPERTIES

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| Appearance          | Lyophilized powder.   |
| Formulation         | Lyophilized from a 0.2 $\mu$ m filtered solution of 150 mM NaCl, 50 mM Tris, 0.5 mM EDTA, pH 7.0. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. |
| Endotoxin Level     | <1 EU/ $\mu$ g, determined by LAL method.   |
| Reconstitution      | It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.  |
| Storage & Stability | Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.  |
| Shipping            | Room temperature in continental US; may vary elsewhere.   |

### DESCRIPTION

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| Background | <p>The Capsid Protein plays a crucial role in the assembly of icosahedral capsids, forming large particles with T=4 icosahedral symmetry composed of 240 capsid protein copies, while a fraction assembles into smaller T=3 particles with 180 capsid proteins. These capsids are transported along microtubules to the nucleus, where phosphorylation of the capsid induces the exposure of a nuclear localization signal in its C-terminal portion, facilitating binding to the nuclear pore complex via importin (karyopherin-) <math>\alpha</math> and <math>\beta</math>. The intact capsids are imported through the nuclear pore into the nuclear basket, likely binding to NUP153. Only mature capsids containing the viral genome can release viral DNA and capsid protein into the nucleoplasm, while immature capsids remain stuck in the basket. Capsids encapsulate pre-genomic RNA and the P protein, with the RNA reverse-transcribed into DNA in the cytoplasm. The capsid, post-reverse transcription, can be directed to the nucleus for additional transcription or bud through the endoplasmic reticulum to produce new virions. The Capsid Protein homodimerizes, then multimerizes, and interacts with cytosol-exposed regions of viral L glycoprotein in the reticulum-to-Golgi compartment. Moreover, it interacts with human FLNB and, in its phosphorylated form, interacts with host importin <math>\alpha</math>, dependent on NLS exposure influenced by genome maturation and/or capsid protein phosphorylation. The Capsid Protein also interacts with host NUP153 in the intricate process of viral assembly and genome release.</p> |
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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