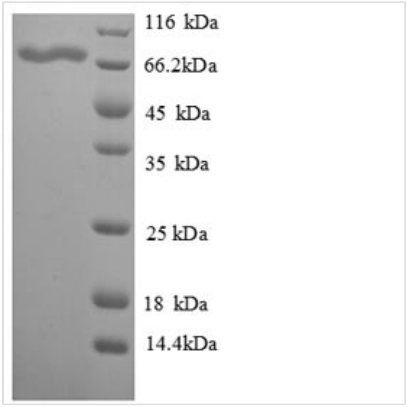
Recombinant Chicken Vitellogenin-2 (VTG2), partial

Product Code	CSB-EP365788CH1
Relevance	Precursor of the major egg-yolk proteins that are sources of nutrients during early development of oviparous organisms.Phosvitin is believed to be of importance in sequestering calcium, iron and other cations for the developing bryo.
Abbreviation	Recombinant Chicken VTG2 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P02845
Alias	Major vitellogeninVitellogenin II
Product Type	Recombinant Protein
Immunogen Species	Gallus gallus (Chicken)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SRRSYLYNYEGSMLNGLQDRSLGKAGVRLSSKLEISGLPENAYLLKVRSPQVE EYNGVWPRDPFTRSSKITQVISSCFTRLFKFEYSSGRIGNIYAPEDCPDLCVNIV RGILNMFQMTIKKSQNVYELQEAGIGGICHARYVIQEDRKNSRIYVTRTVDLNN CQEKVQKSIGMAYIYPCPVDVMKERLTKGTTAFSYKLKQSDSGTLITDVSSRQ VYQISPFNEPTGVAVMEARQQLTLVEVRSERGSAPDVPMQNYGSLRYRFPAV LPQMPLQLIKTKNPEQRIVETLQHIVLNNQQDFHDDVSYRFLEVVQLCRIANAD NLESIWRQVSDKPRYRRWLLSAVSASGTTETLKFLKNRIRNDDLNYIQTLLTVS LTLHLLQADEHTLPIAADLMTSSRIQKNPVLQQVACLGYSSVVNRYCSQTSACP KEALQPIHDLADEAISRGREDKMKLALKCIGNMGEPASLKRILKFLPISSSSAADI PVHIQIDAITALKKIAWKDPKTVQGYLIQILADQSLPPEVRMMACAVIFETRPALA LITTIANVAMKESNMQVASFVYSHMKSLSKSRLPFMYNISSACNIALKLLSPKLD SMSYRYSKVIRADTYFDNYRVGATGEIFVVNS
Research Area	Signal Transduction
Source	E.coli
Target Names	VTG2
Expression Region	26-653aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	74.9kDa
Protein Length	Partial

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Producing recombinant chicken vitellogenin-2 (VTG2) in E. coli involves co-cloning the gene encoding the partial VTG2 protein (26-653aa) into an expression vector with an N-terminal 6xHis-tag gene, followed by transformation into E. coli cells. These cells are cultured under conditions that induce protein expression. Once adequate growth is achieved, the cells are lysed to release the recombinant VTG2 protein, which is purified by affinity chromatography technique. The purity of the recombinant VTG2 protein is confirmed using SDS-PAGE, reaching up to 90%.

Chicken VTG2 is a crucial protein involved in the reproductive biology of chickens. VTG2 plays a significant role in the deposition of yolk mass components, particularly very low-density lipoprotein (VLDL) and vitellogenin (VTG), in chicken oocytes [1]. The protein binds tightly to hen genomic DNA fragments carrying parts of the vitellogenin structural gene, indicating its involvement in gene regulation and expression [2]. Furthermore, the chicken vitellogenin receptor, which binds apolipoproteins, is a member of the low-density lipoprotein receptor (LDLR) superfamily, highlighting its importance in mediating cellular processes related to lipid transport and metabolism [3].

VTG2 is synthesized in the liver of vertebrates and serves as a major yolk precursor protein essential for egg development [4]. Additionally, VTG2 has been identified as a target for estrogen-mediated induction of specific nonhistone chromatin proteins, further emphasizing its role in hormonal regulation and gene expression [5].

References:
[1] H. Bujo, M. Hermann, M. Kaderli, L. Jacobsen, S. Sugawara, J. Nimpfet al., Chicken oocyte growth is mediated by an eight ligand binding repeat member of the ldl receptor family., The Embo Journal, vol. 13, no. 21, p. 5165-5175, 1994. https://doi.org/10.1002/j.1460-2075.1994.tb06847.x
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[3] C. Schonbaum, S. Lee, & A. Mahowald, The drosophila yolkless gene encodes a vitellogenin receptor belonging to the low density lipoprotein receptor superfamily., Proceedings of the National Academy of Sciences, vol. 92, no. 5, p. 1485-1489, 1995. https://doi.org/10.1073/pnas.92.5.1485

[4] E. Smith, H. Cheng, & R. Vallejo, Mapping functional chicken genes: an alternative approach, Poultry Science, vol. 75, no. 5, p. 642-647, 1996. https://doi.org/10.3382/ps.0750642
[5] T. Nakayama, M. Irikura, Y. Setoguchi, M. Nakayama, M. Mochizuki, & K. Ogata, Estrogen-mediated induction of a vitellogenin-specific nonhistone chromatin protein in the male chicken liver, MGG Molecular & General Genetics, vol. 201, no. 2, p. 252-257, 1985. https://doi.org/10.1007/bf00425667

Shelf Life

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