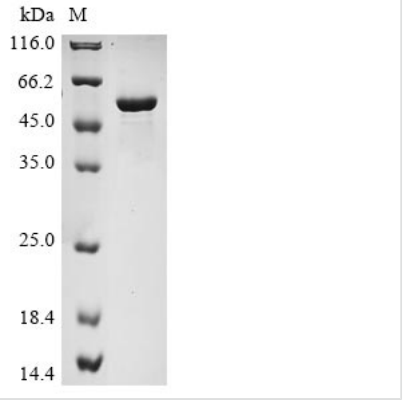
Recombinant Mouse Nicotinamide phosphoribosyltransferase (Nampt)

Product Code	CSB-YP015422MOb0
Abbreviation	Recombinant Mouse Nampt protein
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.	Q99KQ4
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MNAAAEAEFNILLATDSYKVTHYKQYPPNTSKVYSYFECREKKTENSKVRKVK YEETVFYGLQYILNKYLKGKVVTKEKIQEAKEVYREHFQDDVFNERGWNYILEK YDGHLPIEVKAVPEGSVIPRGNVLFTVENTDPECYWLTNWIETILVQSWYPITV ATNSREQKKILAKYLLETSGNLDGLEYKLHDFGYRGVSSQETAGIGASAHLVNF KGTDTVAGIALIKKYYGTKDPVPGYSVPAAEHSTITAWGKDHEKDAFEHIVTQF SSVPVSVVSDSYDIYNACEKIWGEDLRHLIVSRSTEAPLIIRPDSGNPLDTVLKV LDILGKKFPVTENSKGYKLLPPYLRVIQGDGVDINTLQEIVEGMKQKKWSIENV SFGSGGALLQKLTRDLLNCSFKCSYVVTNGLGVNVFKDPVADPNKRSKKGRL SLHRTPAGNFVTLEEGKGDLEEYGHDLLHTVFKNGKVTKSYSFDEVRKNAQL NIEQDVAPH
Research Area	Cytokine
Source	Yeast
Target Names	Nampt
Expression Region	1-491aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	57.9 kDa
Protein Length	Full Length
Image	



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

Description

The construction of a plasmid coding for the mouse nicotinamide phosphoribosyltransferase (NAMPT) protein (1-491aa) and the N-terminal 10xHis-tag is the initial step for the preparation of the recombinant mouse NAMPT protein. The next is to transform the constructed plasmid into yeast cells. Yeast cells containing the plasmid are screened and then cultured under conditions that promote the expression of the gene of interest. After that, CUSABIO uses affinity purification to isolate and purify the recombinant NAMPT protein from the cell lysate. Finally, the resulting recombinant NAMPT protein undergoes SDS-PAGE analysis, demonstrating a purity greater than 85%.

NAMPT, short for nicotinamide phosphoribosyltransferase, is a crucial enzyme that regulates many cellular activities. Its main job is to control the production of NAD+, a key molecule involved in various cellular processes [1]. NAMPT is essential for cell growth, blood vessel formation, cell death, and how cells use energy. It also plays roles in aging, changing cell metabolism, and rewiring cell functions [2][3]. By helping make NAD+, NAMPT influences energy use, protein changes, and DNA repair [4]. Scientists have linked NAMPT to several diseases, including thyroid cancer, urinary incontinence, arthritis, stomach cancer, Alzheimer's disease, gut inflammation, heart disease, and inflammation [2][3][5][6][7][8][9]. Research suggests that NAMPT can boost blood vessel growth through a specific pathway and may contribute to the spread of stomach cancer [10][6]. Moreover, NAMPT seems to worsen inflammation and make blood vessels leaky, which could impact conditions like spinal cord injuries and brain inflammation [11][12]. Scientists have thoroughly studied NAMPT's various roles in the body and its involvement in diseases, offering valuable insights into its importance and potential treatments for human illnesses [13].

References:
[1] B. Zhang, D. Shi, X. Zhang, G. Liang, W. Liu, & S. Qiao, Fk866 inhibits the epithelial?mesenchymal transition of hepatocarcinoma mhcc97?h cells, Oncology Letters, 2018. https://doi.org/10.3892/ol.2018.9541
[2] N. Sawicka?Gutaj, J. Waligórska?Stachura, M. Andrusiewicz, M. Biczysko, J. Sowi?ski, S. Jet al., Nicotinamide phosphorybosiltransferase overexpression in thyroid malignancies and its correlation with tumor stage and with survivin/survivin dex3 expression, Tumor Biology, vol. 36, no. 10, p. 7859-7863, 2015. https://doi.org/10.1007/s13277-015-3506-z
[3] H. Zhang, L. Wang, Y. Xiang, Y. Wang, & H. Li, Nampt promotes fibroblast

extracellular matrix degradation in stress urinary incontinence by inhibiting autophagy, Bioengineered, vol. 13, no. 1, p. 481-495, 2021. https://doi.org/10.1080/21655979.2021.2009417
[4] X. Shen, Y. Hu, X. Huang, D. Shen, & C. Chen, Nicotinamide phosphoribosyltransferase?related signaling pathway in early alzheimer's disease mouse models, Molecular Medicine Reports, 2019. https://doi.org/10.3892/mmr.2019.10782
[5] X. Li, S. Islam, M. Xiong, N. Nsumu, M. Lee, L. Zhanget al., Epigenetic regulation of nfatc1 transcription and osteoclastogenesis by nicotinamide phosphoribosyl transferase in the pathogenesis of arthritis, Cell Death Discovery, vol. 5, no. 1, 2019. https://doi.org/10.1038/s41420-018-0134-6
[6] T. Bi, X. Che, X. Liao, D. Zhang, H. Long, H. Liet al., Overexpression of nampt in gastric cancer and chemopotentiating effects of the nampt inhibitor fk866 in combination with fluorouracil, Oncology Reports, 2011. https://doi.org/10.3892/or.2011.1378
[7] K. Neubauer, I. Bednarz–Misa, E. Wa?ecka-Zacharska, J. Wierzbicki, A. Agrawal, A. Gamianet al., Oversecretion and overexpression of nicotinamide phosphoribosyltransferase/pre-b colony-enhancing factor/visfatin in inflammatory bowel disease reflects the disease activity, severity of inflammatory response and hypoxia, International Journal of Molecular Sciences, vol. 20, no. 1, p. 166, 2019. https://doi.org/10.3390/ijms20010166
[8] Y. Kong, G. Li, W. Zhang, H. Xia, C. Zhou, T. Xuet al., Nicotinamide phosphoribosyltransferase aggravates inflammation and promotes atherosclerosis in apoe knockout mice, Acta Pharmacologica Sinica, vol. 40, no. 9, p. 1184-1192, 2019. https://doi.org/10.1038/s41401-018-0207-3
[9] V. Pulla, D. Sriram, V. Soni, S. Viswanadha, D. Sriram, & P. Yogeeswari, Targeting nampt for therapeutic intervention in cancer and inflammation: structure?based drug design and biological screening, Chemical Biology & Drug Design, vol. 86, no. 4, p. 881-894, 2015. https://doi.org/10.1111/cbdd.12562
[10] L. Zhang, D. Heruth, & S. Ye, Nicotinamide phosphoribosyltransferase in human diseases, Journal of Bioanalysis & Biomedicine, vol. 03, no. 01, 2011. https://doi.org/10.4172/1948-593x.1000038
[11] E. Esposito, D. Impellizzeri, E. Mazzon, G. Fakhfouri, R. Rahimian, C. Travelliet al., The nampt inhibitor fk866 reverts the damage in spinal cord injury, Journal of Neuroinflammation, vol. 9, no. 1, 2012. https://doi.org/10.1186/1742-2094-9-66
[12] N. Yan, W. Yang, X. Dong, F. Qiao, Y. Gong, J. Zhouet al., Promotion of anoxia?reoxygenation?induced inflammation and permeability enhancement by nicotinamide phosphoribosyltransferase?activated mapk signaling in human umbilical vein endothelial cells, Experimental and Therapeutic Medicine, 2017. https://doi.org/10.3892/etm.2017.5083
[13] L. Zhang, L. Haandel, M. Xiong, P. Huang, D. Heruth, C. Biet al., Metabolic and molecular insights into an essential role of nicotinamide phosphoribosyltransferase, Cell Death and Disease, vol. 8, no. 3, p. e2705-e2705, 2017. https://doi.org/10.1038/cddis.2017.132

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final

	concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	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.