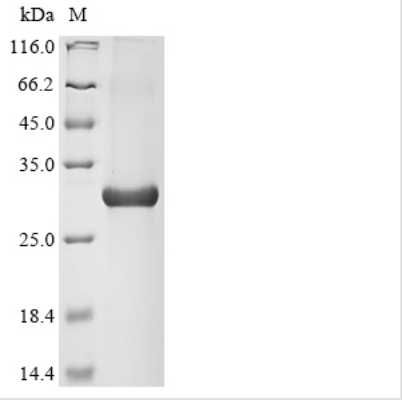
Recombinant Human Aryl hydrocarbon receptor (AHR), partial

Product Code	CSB-EP001481HU3
Abbreviation	Recombinant Human AHR 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.	P35869
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	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	FICRLRCLLDNSSGFLAMNFQGKLKYLHGQKKKGKDGSILPPQLALFAIATPLQ PPSILEIRTKNFIFRTKHKLDFTPIGCDAKGRIVLGYTEAELCTRGSGYQFIHAAD MLYCAESHIRMIKTGESGMIVFRLLTKNNRWTWVQSNARLLYKNGRPDYIIVTQ RPLTDEEGTEHLRKRNTKLPFMFTTGEAVLYEATNPF
Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Target Names	AHR
Expression Region	220-420aa
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	29.0 kDa
Protein Length	Partial
Image	



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

Description

The production of the recombinant human aryl hydrocarbon receptor (AHR) involves several steps. The gene encoding the 220-420aa of the human AHR is co-inserted into a vector with N-terminal 10xHis-tag gene. The recombinant vector is transfected into the E.coli cell for expression. The product is the recombinant human AHR, which is subject to affinity chromatogeaphy purification. Its purity reaches up to than 85% as determined by SDS-PAGE.

The human AHR, a member of the bHLH/PAS family of transcription factors, is primarily activated by binding to ligands such as polycyclic aromatic hydrocarbons (PAHs), dioxins, and other environmental pollutants [1][2][3]. Upon ligand binding, AhR translocates to the nucleus, where it heterodimerizes with the ARNT, facilitating the transcription of target genes involved in xenobiotic metabolism, immune response, and cellular differentiation [4][5].

The activation of AHR has been shown to regulate the expression of various cytochrome P450 enzymes, particularly CYP1A1 and CYP1B1, which are crucial for the metabolism of carcinogens [6][7]. This regulation is vital for detoxifying harmful substances. AHR is also implicated in the pathogenesis of diseases such as cancer, as its activation can lead to the expression of genes that promote cell proliferation and survival in response to toxic insults [8].

References:
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[2] H. Zhao, T. Yang, Y. Feng, N. Vaziri, B. Liu, Q. Liuet al., Aryl hydrocarbon receptor activation mediates kidney disease and renal cell carcinoma, Journal of Translational Medicine, vol. 17, no. 1, 2019. https://doi.org/10.1186/s12967-019-2054-5
[3] T. Peng, J. Chen, W. Mao, X. Liu, T. Yu, L. Chenet al., Potential therapeutic significance of increased expression of aryl hydrocarbon receptor in human gastric cancer, World Journal of Gastroenterology, vol. 15, no. 14, p. 1719, 2009. https://doi.org/10.3748/wjg.15.1719
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[6] M. Roth, J. Marques-Magallanes, M. Yuan, W. Sun, D. Tashkin, & O. Hankinson, Induction and regulation of the carcinogen-metabolizing enzyme cyp1a1 by marijuana smoke and δ9-tetrahydrocannabinol, American Journal of Respiratory Cell and Molecular Biology, vol. 24, no. 3, p. 339-344, 2001. https://doi.org/10.1165/ajrcmb.24.3.4252
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[8] J. Hukkanen, A. Lassila, K. Päivärinta, S. Valanne, S. Sarpo, J. Hakkolaet al., Induction and regulation of xenobiotic-metabolizing cytochrome p450s in the human a549 lung adenocarcinoma cell line, American Journal of Respiratory Cell and Molecular Biology, vol. 22, no. 3, p. 360-366, 2000. https://doi.org/10.1165/ajrcmb.22.3.3845

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.
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