



碧云天生物技术/Beyotime Biotechnology
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Recombinant Human Soluble TNF-α (Trimeric form)

产品编号	产品名称	包装
P5320-10μg	Recombinant Human Soluble TNF-α (Trimeric form)	10μg
P5320-100μg	Recombinant Human Soluble TNF-α (Trimeric form)	100μg
P5320-1mg	Recombinant Human Soluble TNF-α (Trimeric form)	1mg

产品简介:

Species	Gene ID	Accession	Source	Length	MW	Tag
Human	7124	P01375	<i>E. coli</i>	157aa	17.3kDa	No

蛋白信息(About this protein)	
名称(Name)	Recombinant Human Soluble TNF-α (Trimeric form); 重组可溶性人肿瘤坏死因子α (三聚体)
别名(Synonyms)	Cachetin; DIF; TNF; tnfa; tnf-a; TNFSF1A; TNFSF2; APC1 protein; Cachectin; DIF; TNF, monocyte-derived; TNF-a; TNF-alpha cachectin; TNFATNF, macrophage-derived; TNFSF2TNF superfamily, member 2; tumor necrosis factor; tumor necrosis factor (TNF superfamily, member 2); tumor necrosis factor alpha; Tumor necrosis factor ligand superfamily member 2; tumor necrosis factor-alpha
产品简介 (Background)	Beyotime's Recombinant Human TNF-α contains soluble cytokines (77-233aa) of the protein. This protein was expressed in <i>E.coli</i> and purified without tag. It is expressed as soluble trimer, which has been validated by Size-exclusion chromatography. Apoptosis induced experiments confirmed that the protein had high biological activity. TNF-α is a multifunctional proinflammatory cytokine that belongs to the tumor necrosis factor (TNF) superfamily, and it produced by various immune cells, including T cells, B cells, natural killer cells and macrophages. As a transmembrane protein, TNF-α's membrane-bound site can be cleaved by the metalloprotease ADAM17/TACE, releasing the soluble cytokine into the extracellular space to form polymers [1-2]. The cellular response to TNF-α is mediated through the receptors TNFR1 and TNFR2. TNFR1 can be activated by both the membrane-bound and soluble trimeric forms of TNF-α, and resulting the downstream apoptosis signaling pathway. While the TNFR2 responds to the membrane-bound form of TNF-α, and promotes T cell activation and proliferation [3]. TNF-α plays a key regulatory role in inflammation and host defense against bacterial infection. The role of TNF-α in autoimmunity is underscored by blocking TNF-α action to treat rheumatoid arthritis and Crohn' s disease.
产品用途 (Applications)	Sandwich ELISA, Cell Culture, Functional Studies, Mass Spectrometry, HPLC, SDS-PAGE
外观 (Physical appearance)	Liquid
活性 (Biological activity)	Fully biologically active when compared to standard. The ED50 as determined by the dose-dependent Killing/apoptosis of L-929 cells is 0.05ng/ml corresponding to a Specific Activity of 2×10^7 units/mg.
浓度 (Concentration)	1mg/ml
纯度(Purity)	Sterile, >98% as determined by SDS-PAGE
储存液 (Storage buffer)	PBS (pH7.4)

➤ 本产品纯度高, 并经过滤除菌处理。本产品经SDS-PAGE电泳检测蛋白纯度和分子量参考图1。本产品经过滤除菌处理, 可以直

接用于培养细胞的刺激。

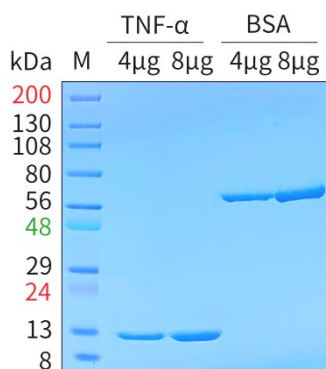


图1. 碧云天Recombinant Human Soluble TNF- α (Trimeric form) (P5320)的SDS-PAGE电泳检测图。本产品经BeyoGel™ Plus PAGE预制胶(Hepes, 4-20%, 10孔) (P0523)电泳, 蛋白Marker (M)为BeyoColor™彩色预染蛋白分子量标准(6.5-270kD) (P0071/P0072), 后续经BeyoBlue™考马斯亮蓝超快染色液(P0017F)染色。实际效果会因样品种类、检测仪器等的不同而存在差异, 图中数据仅供参考。

- 本产品可有效激活NF- κ B的核转运信号通路, 使p65 (REL-associated protein, Rel-A)转移到细胞核内。稳定表达EGFP-p65的HeLa细胞(C8001)经终浓度为10ng/ml的本产品刺激后EGFP-p65进入细胞核, 需要注意的是随着时间的延长EGFP-p65会出核再次回到细胞质中, 因此加入本产品后观察EGFP-p65进入细胞核理想的时间为15-60分钟(图2)。

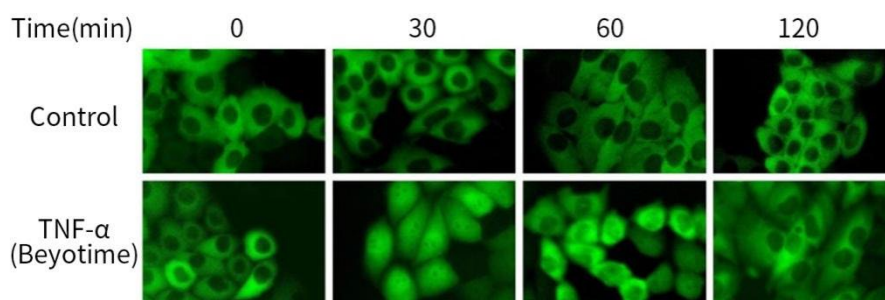


图2. 碧云天Recombinant Human Soluble TNF- α (Trimeric form) (P5320)激活NF- κ B信号通路诱导核转运的效果图。稳定表达EGFP-p65的HeLa细胞(C8001)加入或不加入终浓度为10ng/ml的本产品, 分别在0、30、60和120分钟用荧光显微镜进行拍照。可见在静息状态(Inactive state)下(Control), EGFP-p65均匀分布在细胞质中(第1行); 加入TNF- α 刺激后, 激活状态(Active state)下EGFP-p65进入细胞核内(第2行, 30分钟), 但是随着时间的延长EGFP-p65会出核再次回到细胞质中(第2行, 120分钟)。实际效果会因实验仪器、检测条件等的不同而存在差异, 图中效果仅供参考。

- 本产品与SM-164 (XIAP抑制剂)联合使用可有效诱导细胞凋亡。100nM SM-164 (XIAP抑制剂) (SC0114)与不同浓度的本产品组成的细胞凋亡诱导剂, 诱导BGC-823 (人胃癌细胞)(C6123)细胞凋亡的效果参考图3。

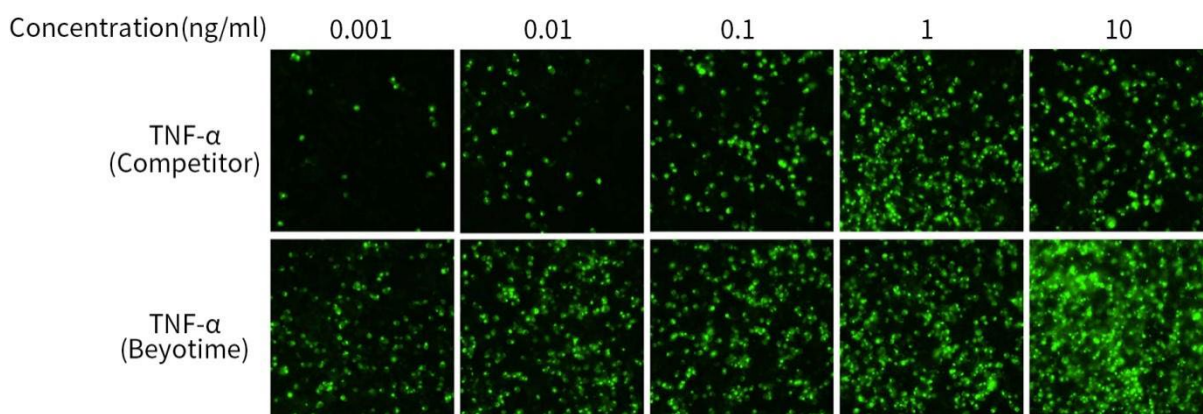


图3. 碧云天Recombinant Human Soluble TNF- α (Trimeric form) (P5320)诱导细胞凋亡效果图。BGC-823 (人胃癌细胞)(C6123)经100nM SM-164 (XIAP抑制剂) (SC0114)与相应浓度的本产品组成的细胞凋亡诱导剂处理5-6小时, 后续采用YO-PRO-1 (凋亡与坏死细胞绿色荧光探针) (C2022)对细胞进行染色。图中可见TNF- α 三聚体(Trimer)的本产品比常规的TNF- α 单体(monomer)有更强的细胞凋亡诱导效果。实际效果会因实验仪器、检测条件等的不同而存在差异, 图中效果仅供参考。

- 本产品经尺寸排阻层析(Size-exclusion chromatography, SEC)验证为三聚体。人体中TNF- α 为26kDa的单次跨膜蛋白，TNF- α 被TACE/ADAM17 (TNF- α Converting Enzyme/A Disintegrin and Metalloprotease 17)在Ala76-Val77之间切割，成为游离于细胞膜外可溶形式的TNF- α (77-233aa)，无论是单次跨膜的TNF- α ，还是游离于细胞膜外可溶形式的TNF- α ，都以同源三聚体的构象行使其生物活性[4]。参考图4，本产品经16/60 Beyodex™ 200pg验证为三聚体。

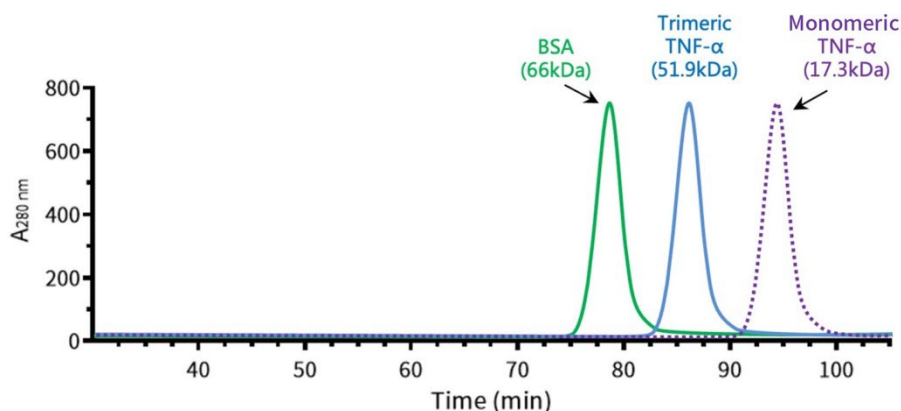


图4. 碧云天Recombinant Human Soluble TNF- α (Trimeric form) (P5320)经使用16/60 Beyodex™ 200pg进行凝胶过滤层析(也称尺寸排阻层析)分析确认为三聚体的参考图。牛血清白蛋白(Bovine Serum Albumin, BSA)分子量约为66kDa，是一种常见的蛋白分子量标准，在使用16/60 Beyodex™ 200pg检测中A_{280nm}实际出峰位置为78min (见绿色实线)。如果TNF- α 为单体形式(TNF- α Monomer, 17.3kDa)，那么在使用16/60 Beyodex™ 200pg检测中A_{280nm}理论出峰位置应为95min (见紫色虚线)。本产品在使用16/60 Beyodex™ 200pg检测中A_{280nm}实际出峰位置为86min (见蓝色实线)，符合TNF- α 三聚体形式(TNF- α Trimer, 51.9kDa)的出峰位置。实际检测结果可能会因样品和检测条件等的不同而存在差异，结果图仅供参考。

包装清单:

产品编号	产品名称	包装
P5320-10 μ g	Recombinant Human Soluble TNF- α (Trimeric form)	10 μ g
P5320-100 μ g	Recombinant Human Soluble TNF- α (Trimeric form)	100 μ g
P5320-1mg	Recombinant Human Soluble TNF- α (Trimeric form)	1mg
—	说明书	1份

保存条件:

-20°C保存，一年有效。-80°C保存，可以保存更长时间。

注意事项:

- 由于蛋白的每次冻融均会引起部分失活，所以首次配制成相应浓度的储存液后，须分装后-20°C或更低温度冻存，尽量避免反复冻融。
- 本产品仅限于专业人员的科学研究用，不得用于临床诊断或治疗，不得用于食品或药品，不得存放于普通住宅内。
- 为了您的安全和健康，请穿实验服并戴一次性手套操作。

使用说明:

1. 收到产品后请立即按照说明书推荐的条件保存。在打开管盖前，请适当离心，使附着在管盖或管壁上的蛋白聚集于管底。
2. 具体的最佳工作浓度请自行参考相关文献，或者根据实验目的，通过实验进行摸索和优化。

参考文献:

1. Aggarwal BB. Nat Rev Immunol. 2003. 3(9): 745-56.
2. Hehlgans T, Pfeffer K. Immunology. 2005. 115(1): 1-20.
3. Mukai Y, Nakamura T, Yoshikawa M, Yoshioka Y, Tsunoda S, et al. Sci Signal. 2010. 3(148):ra83.
4. Canault M. Thromb Haemost. 2004. 92(6):1428-1437.

相关产品:

产品编号	产品名称	包装
AF8208	TNF- α Rabbit Polyclonal Antibody	50 μ l
C0006S	细胞凋亡诱导试剂盒(TNF- α +SM-164)	100次
P5318-10 μ g	Recombinant Human TNF- α /TNFSF2	10 μ g
P5318-100 μ g	Recombinant Human TNF- α /TNFSF2	100 μ g
P5318-1mg	Recombinant Human TNF- α /TNFSF2	1mg
P5320-10 μ g	Recombinant Human Soluble TNF- α (Trimeric form)	10 μ g

P5320-100µg	Recombinant Human Soluble TNF-α (Trimeric form)	100µg
P5320-1mg	Recombinant Human Soluble TNF-α (Trimeric form)	1mg
P5322-10µg	Recombinant Human TNF-α/TNFSF2, His-tag	10µg
P5322-50µg	Recombinant Human TNF-α/TNFSF2, His-tag	50µg
P5322-100µg	Recombinant Human TNF-α/TNFSF2, His-tag	100µg
P5322-1mg	Recombinant Human TNF-α/TNFSF2, His-tag	1mg
P5327-10µg	Recombinant Human TNF-α/TNFSF2, Variant	10µg
P5880-5µg	Recombinant Rhesus Macaque TNF-α/TNFSF2	5µg
P5880-100µg	Recombinant Rhesus Macaque TNF-α/TNFSF2	100µg
P5880-1mg	Recombinant Rhesus Macaque TNF-α/TNFSF2	1mg
P6020-5µg	Recombinant Murine TNF-α/TNFSF2	5µg
P6020-100µg	Recombinant Murine TNF-α/TNFSF2	100µg
P6020-1mg	Recombinant Murine TNF-α/TNFSF2	1mg
P6231-5µg	Recombinant Canine TNF-α/TNFSF2	5µg
P6231-100µg	Recombinant Canine TNF-α/TNFSF2	100µg
P6231-1mg	Recombinant Canine TNF-α/TNFSF2	1mg
P6335-5µg	Recombinant Rat TNF-α/TNFSF2	5µg
P6335-100µg	Recombinant Rat TNF-α/TNFSF2	100µg
P6335-1mg	Recombinant Rat TNF-α/TNFSF2	1mg
P7495-5µg	Recombinant Human TNF-α/TNFSF2 GMP	5µg
P7495-100µg	Recombinant Human TNF-α/TNFSF2 GMP	100µg
P7495-1mg	Recombinant Human TNF-α/TNFSF2 GMP	1mg
PT518	Human TNF-α ELISA Kit	96次
PT512	Mouse TNF-α ELISA Kit	96次
PT520	Porcine TNF-α ELISA Kit	96次
PT516	Rat TNF-α ELISA Kit	96次

Version 2022.08.17