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Recombinant Human HRas (His-Tag)

产品编号	产品名称	包装
P2403-10μg	Recombinant Human HRas (His-Tag)	10μg
P2403-100μg	Recombinant Human HRas (His-Tag)	100μg
P2403-1mg	Recombinant Human HRas (His-Tag)	1mg

产品简介:

Species	Gene ID	Accession	Source	Length	MW	Tag
Human	3265	P01112	*E.coli*	202aa	~23kDa	N-His Tag

蛋白信息(About this protein)	
名称(Name)	Recombinant Human HRas; 重组人HRas蛋白
别名(Synonyms)	HRAS, C-BAS/HAS, C-H-RAS, C-HA-RAS1, CTLO, H-RASIDX, HAMSV, HRAS1, RASH1, transforming protein p21, p21ras, Harvey rat sarcoma viral oncogene homolog, HRas proto-oncogene, GTPase, Ki-Ras, c-Ki-ras, KRAS2, KRAS, c-K-ras, RASK2
产品简介 (Background)	Beyotime's recombinant human HRas (rhHRas) was expressed in *E.coli* and purified, which contain the mature form HRas (2-186aa) fusion with 6X His tag (HHHHHH) at the N-terminus. Ras (HRas, NRas and KRas) is the most frequently mutated gene family in cancers, they differ significantly only in the C-terminal 40 amino acids. These Ras genes have GTP/GDP binding and GTPase activity, and their normal function may be as G-like regulatory proteins involved in the normal control of cell growth. Ras directly interacts with and activates several downstream effector pathways including the mitogen-activated protein kinase (MAPK) and phosphatidylinositol 3-kinase (PI3K) pathways. Mutations in Ras gene disrupt the guanine exchange cycle, typically by becoming GAP-independent and 'locking' Ras in the active, GTP-bound state, thereby activating downstream signaling pathways resulting in tumor cell growth. HRas, from "Harvey Rat sarcoma virus", is an enzyme that in humans is encoded by the HRas gene. The HRas gene is located on the short (p) arm of chromosome 11 at position 15.5. HRas activate the RAS–RAF–MEK–ERK pathway. Typical hotspots for HRas mutations are found at codon 12, 13 and 61, resulting in G12C/S, G13R/V and Q61R/L mutations. HRas is a frequently mutated oncogene especially in head and neck cancer, bladder cancer, vulvar squamous cell carcinoma, cutaneous squamous cell carcinoma and lung cancer [1].
产品用途 (Applications)	Recombinant Human HRas is useful in studying HRas interacting proteins, effectors, GAPs (GTPase-activating proteins) and GEFs (Guanine nucleotide-exchange factors). It can also be used as positive control in Western blots.
外观 (Physical appearance)	Liquid
活性 (Biological activity)	The specific activity of HRas was 4.3 nmol/min/mg in GTPase activity assay.
浓度 (Concentration)	1mg/ml
纯度(Purity)	≥ 95% by SDS-PAGE
储存液 (Storage buffer)	20mM HEPES (pH7.4), 200mM NaCl, 1mM EDTA, 2mM DTT, 5% glycerol

- 小GTP酶(Small GTPase), 也称Small G-proteins、Ras superfamily, 是调节真核细胞信号转导、细胞增殖、细胞骨架重组和细胞内膜转运等过程的分子开关, 小GTP酶通过结合和水解GTP, 在"激活"和"静息"状态之间循环: 在外界信号的刺激下,

鸟苷酸交换因子(Guanine nucleotide-exchange factors, GEFs)辅助小GTP酶将结合的GDP置换为GTP，小GTP酶结合GTP进入激活状态(Active state)；激活状态的小GTP酶与下游效应蛋白(Effector protein)相互作用，从而刺激细胞发生相应的响应；GTP酶激活蛋白(GTPase-activating proteins, GAPs)催化小GTP酶结合的GTP水解为GDP，并释放自由磷酸盐(Free phosphate, Pi)，此时小GTP酶结合GDP进入静息状态(Inactive state)，鸟嘌呤核苷酸解离抑制蛋白(Guanine nucleotide dissociation inhibitors, GDIs)抑制小GTP酶释放GDP，直到GEFs受到刺激信号再次开启新一轮的循环(图1) [2-3]。

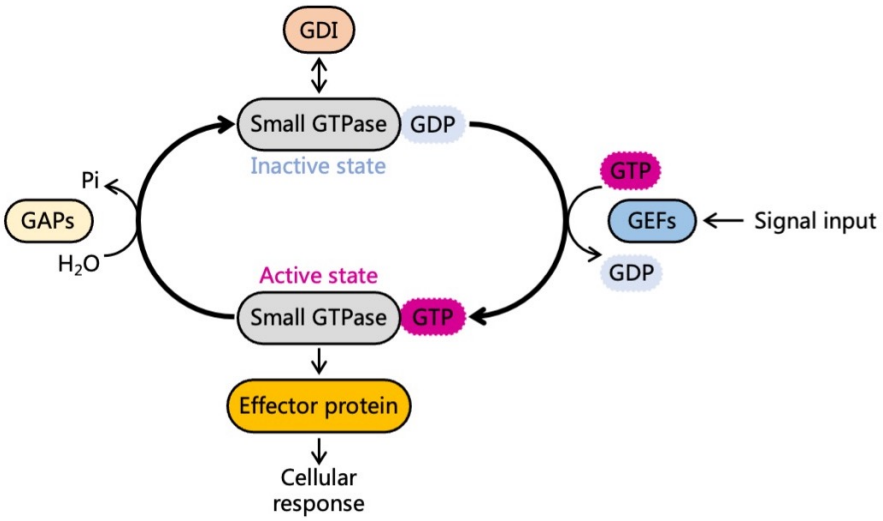

图1. 小GTP酶在“激活”和“静息”状态之间循环的原理图。

- 小GTP酶在人类中已发现超过150个家族成员，在果蝇(*Drosophila*)、秀丽隐杆线虫(*C. elegans*)、酿酒酵母(*S. cerevisiae*)、粟酒裂殖酵母(*S. pombe*)、黏菌(*Dictyostelium*)和植物中也都发现了保守的同源物。小GTP酶根据结构和功能被分为5个家族分支：Ras家族、Rho家族、Ran家族、Rab家族和Arf家族。Ras家族本身又被分为6个亚家族：Ras亚家族、Ral亚家族、Rit亚家族、Rap亚家族、Rheb亚家族和Rad亚家族[4]。
- Ras家族(Ras homologous GTPases)是调节肌动蛋白重组的关键因子，因此在肌动蛋白细胞骨架完整性、细胞增殖、细胞分化、细胞粘附、细胞凋亡和细胞迁移等细胞过程中发挥着重要作用。目前有16个成员被发现，被分为6个亚家族(见下表)，其中HRas、NRas和KRas研究的最为广泛[5]。

Subfamily	Ras	Ral	Rit	Rap	Rheb	Rad
Subfamily members	HRas NRas KRas4A KRas4B	RalA RalB	Rit1 Rit2	Rap1A Rap1B Rap2A Rap2B Rap2C	Rheb RhebL1	RRad

- 本产品经SDS-PAGE电泳检测蛋白纯度和分子量参考图2。

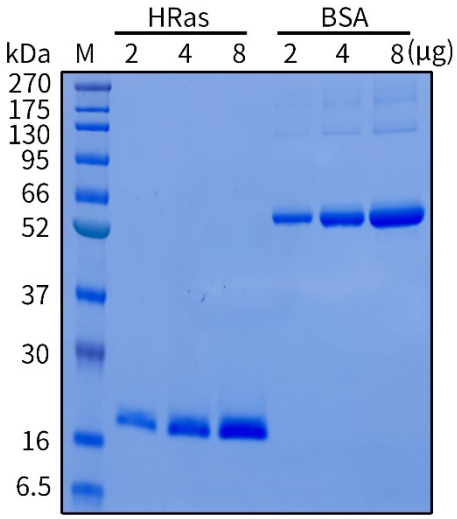

图2. 碧云天Recombinant Human HRas (P2403)的SDS-PAGE电泳检测图。本蛋白经BeyoGel™ Plus PAGE预制胶(Tris-Gly, 4-15%, 10孔) (P0465)电泳，Marker为BeyoColor™彩色预染蛋白分子量标准(6.5-270kD) (P0071/P0072)，并经BeyoBlue™考马斯亮蓝超快染色液(P0017F)染色。实际检测结果可能会因样品和检测条件等的不同而存在差异，图中数据仅供参考。

包装清单：

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P2403-100μg	Recombinant Human HRas (His-Tag)	100μg
P2403-1mg	Recombinant Human HRas (His-Tag)	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. Geyer FC, Li A, Papanastasiou AD, Smith A, Selenica P. Nat Commun. 2018. 9(1):1816.
2. Vernoud V, Horton AC, Yang Z, Nielsen E. Plant Physiol. 2003. 131(3):1191-208.
3. Ito H, Morishita R, Nagata KI. Int J Mol Sci. 2018. 19(7):2121.
4. Goitre L, Trapani E, Trabalzini L, Retta SF. Methods Mol Biol. 2014. 1120:1-18.
5. Bos JL. Cancer Research. 1989. 49(17): 4682–9.

相关产品：

产品编号	产品名称	包装
P2061-1ml	Rhotekin-RBD Agarose (活性Rho结合琼脂糖凝胶)	1ml
P2063-10μg	Recombinant Human RhoA (Flag-Tag)	10μg
P2063-100μg	Recombinant Human RhoA (Flag-Tag)	100μg
P2063-1mg	Recombinant Human RhoA (Flag-Tag)	1mg
P2065S	Active Rho Pull-down and Detection Kit	50次
P2065M	Active Rho Pull-down and Detection Kit	250次
P2401-10μg	Recombinant Human NRas (Flag-Tag)	10μg
P2401-100μg	Recombinant Human NRas (Flag-Tag)	100μg
P2401-1mg	Recombinant Human NRas (Flag-Tag)	1mg
P2403-10μg	Recombinant Human HRas (His-Tag)	10μg
P2403-100μg	Recombinant Human HRas (His-Tag)	100μg
P2403-1mg	Recombinant Human HRas (His-Tag)	1mg
P2405-10μg	Recombinant Human KRas4A (His-Tag)	10μg
P2405-100μg	Recombinant Human KRas4A (His-Tag)	100μg
P2405-1mg	Recombinant Human KRas4A (His-Tag)	1mg
P2407-10μg	Recombinant Human KRas4B (His-Tag)	10μg
P2407-100μg	Recombinant Human KRas4B (His-Tag)	100μg
P2407-1mg	Recombinant Human KRas4B (His-Tag)	1mg
P2409-10μg	Recombinant Human KRas4B (G12C, His-Tag)	10μg
P2409-100μg	Recombinant Human KRas4B (G12C, His-Tag)	100μg
P2409-1mg	Recombinant Human KRas4B (G12C, His-Tag)	1mg
P2411-10μg	Recombinant Human KRas4B (G12D, His-Tag)	10μg
P2411-100μg	Recombinant Human KRas4B (G12D, His-Tag)	100μg
P2411-1mg	Recombinant Human KRas4B (G12D, His-Tag)	1mg
P2413-10μg	Recombinant Human KRas4B (G12V, His-Tag)	10μg
P2413-100μg	Recombinant Human KRas4B (G12V, His-Tag)	100μg
P2413-1mg	Recombinant Human KRas4B (G12V, His-Tag)	1mg
P2415-10μg	Recombinant Human KRas4B (G13D, His-Tag)	10μg

P2415-100μg	Recombinant Human KRas4B (G13D, His-Tag)	100μg
P2415-1mg	Recombinant Human KRas4B (G13D, His-Tag)	1mg
P2417-10μg	Recombinant Human KRas4B (G13S, His-Tag)	10μg
P2417-100μg	Recombinant Human KRas4B (G13S, His-Tag)	100μg
P2417-1mg	Recombinant Human KRas4B (G13S, His-Tag)	1mg
P2419-10μg	Recombinant Human KRas4B (Q61H, His-Tag)	10μg
P2419-100μg	Recombinant Human KRas4B (Q61H, His-Tag)	100μg
P2419-1mg	Recombinant Human KRas4B (Q61H, His-Tag)	1mg
AF0273	Ras Rabbit Polyclonal Antibody	50μl
AF1168	Ras Rabbit Monoclonal Antibody	50μl
AF7131	HRas Rabbit Polyclonal Antibody	50μl
AF7347	KRAS Rabbit Polyclonal Antibody	50μl
AG2391	KRAS Rabbit Monoclonal Antibody	50μl
AG2394	KRAS Mouse Monoclonal Antibody	50μl

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