

Rabbit Anti-UCP-1/AP Conjugated antibody

SL1925R-AP

Product Name	Anti-UCP-1/AP
Chinese Name	碱性磷酸酶（AP）标记的 Mitochondrion 脱偶连蛋白 1 抗体
Alias	Uncoupling Protein-1; UCP1; UCP 1; Mitochondrial brown fat uncoupling protein 1; mitochondrial brown fat uncoupling protein; SLC25A7; Thermogenin; UCP 1; UCP; Uncoupling protein 1; UCP1_HUMAN.
Research Area	Tumour immunology Neurobiology Signal transduction Mitochondrion
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human(predicted:Mouse,Rat)
Applications	WB=1:500-2000 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight	33kDa
Form	Lyophilized or Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human UCP-1
Lsotype	IgG
Purification	affinity purified by Protein A
Storage Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Storage	
Product Detail	background: Mitochondrial uncoupling proteins (UCP) are members of the family of mitochondrial anion carrier proteins (MACP). UCPs separate oxidative phosphorylation from ATP synthesis with energy dissipated as heat, also referred to as the mitochondrial proton leak. UCPs facilitate the transfer of anions from the inner to the outer mitochondrial membrane and the return transfer of protons from the outer to the inner mitochondrial membrane. They

also reduce the mitochondrial membrane potential in mammalian cells. Tissue specificity occurs for the different UCPs and the exact methods of how UCPs transfer H⁺/OH⁻ are not known. UCPs contain the three homologous protein domains of MACPs. This gene is expressed only in brown adipose tissue, a specialized tissue which functions to produce heat. [provided by RefSeq].

Function:

UCP are mitochondrial transporter proteins that create proton leaks across the inner mitochondrial membrane, thus uncoupling oxidative phosphorylation from ATP synthesis. As a result, energy is dissipated in the form of heat.

Subunit:

Acts as a dimer forming a proton channel.

Subcellular Location:

Mitochondrion inner membrane; Multi-pass membrane protein.

Tissue Specificity:

Brown adipose tissue.

Similarity:

Belongs to the mitochondrial carrier family.

Contains 3 Solcar repeats.

Database links:

[Entrez Gene: 7350](#) Human

[Entrez Gene: 22227](#) Mouse

[Entrez Gene: 24860](#) Rat

[Omid: 113730](#) Human

[SwissProt: P25874](#) Human

[SwissProt: P12242](#) Mouse

[SwissProt: P04633](#) Rat

[Unigene: 249211](#) Human

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

Mitochondrion 及 Cyto-c 在 Apoptosis 中的中心地位虽然在不同信号诱导的 Apoptosis 具有一定意义，但 Mitochondrion 作为细胞内死亡信号的感受者和放大者在 Apoptosis 中的重要性是毋庸置疑的。

Mitochondrion 由两层膜包被,外膜平滑,内膜向内折叠形成嵴,两层膜之间有腔,Mitochondrion 中央是基质。基质内含有与三羧酸循环所需的全部酶类,内膜上具有呼吸链酶系及 ATP 酶复合体。Mitochondrion 能为细胞的生命活动提供场所,是细胞内氧化磷酸化和形成 ATP 的主要场所。另外,Mitochondrion 有自身的 DNA 和遗传体系,但 Mitochondrion 基因组的基因数量有限,因此,Mitochondrion 只是一种半自主性的细胞器。

我们每时每刻都在呼吸,目的是把氧气吸入体内用于制造生物体可利用的能量分子 ATP。氧气被 Mitochondrion 利用制造能量的过程如同发电厂燃烧煤发电。Mitochondrion 内有两个主要部件参与能量的制造,一个部件叫做呼吸链,另一个部件叫做三磷酸腺苷酶(简称 ATP 酶)。顾名思义呼吸链是直接利用氧气把食物燃烧的部件,食物中储存有光合作用固化下来的太阳能,燃烧食物如同发电厂燃煤锅炉的作用,目的是把固化的太阳能释放出来推动发电机发电。ATP 酶本质上是一个可以发电的分子马达,像锅炉燃煤推动发电机转动生产电流一样,固化的太阳能释放出来推动分子马达的转动可以制造能量分子 ATP。我们每人每天大约消耗相当于体重数量的能量分子 ATP,因此, Mitochondrion 不断制造 ATP 分子是维持生命活力所必需的。

Mitochondrion 是细胞有氧呼吸的主要场所.主要分为三个阶段:

第一阶段: 在细胞质的基质中,一个分子的葡萄糖分解成两个分子的丙酮酸,同时脱下 4 个[H]酶;在葡萄糖分解的过程中释放出少量的能量,其中一部分能量用于合成 ATP,产生少量的 ATP。反应式: $C_6H_{12}O_6 \xrightarrow{\text{酶}} 2 \text{丙酮酸} + 4[H] + \text{少量能量}$

第二阶段: 丙酮酸进入 Mitochondrion 的基质中,两分子丙酮酸和 6 个水分子中的氢全部脱下,共脱下 20 个[H],丙酮被氧化分解成二氧化碳;在此过程释放少量的能量,其中一部分用于合成 ATP,产生少量的能量。反应式: $2 \text{丙酮酸} + 6H_2O \xrightarrow{\text{酶}} 20[H] + 6CO_2 + \text{少量能量}$

第三阶段: 在 Mitochondrion 的内膜上,前两阶段脱下的共 24 个[H]与从外界吸收或叶绿体光合作用产生的 6 个 O_2 结合成水;在此过程中释放大量的能量,其中一部分能量用于合成 ATP,产生大量的能量。反应式: $24[H] + 6O_2 \xrightarrow{\text{酶}} 12H_2O + \text{大量能量}$