辣根过氧化物酶（Horseradish Peroxidase, HRP）

种属：	Horseradish
表达系统：	Prokaryotic expression system、Eukaryotic expression system
标签：	N-His
同用名：	Peroxidase (POD) from Horseradish
分子量：	44 KDa
纯度：	lyophilized powder, ≥340 U/mg
储存条件:	1mg/ml solution (0.1M phosphate buffer, pH6.0)
备注:	Please use this product immediately after receiving it or store it according to the conditions recommended in the instructions. As the storage time increases, the enzyme activity will decrease to a certain extent. This product is a freeze-dried powder. After being stored at 37ºC for 2 weeks, the enzyme activity can be maintained at least 80%. This product is only for scientific research by professionals. It must not be used for clinical diagnosis or treatment. It must not be used in food or medicine. It must not be stored in ordinary residences. For your safety and health, please wear a lab coat and disposable gloves.
储存时间：	Stored at 4ºC or -20ºC away from light, it will be valid for at least two years.
运输：	Ice pack transport

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背景:

Horseradish Peroxidase (HRP), also known as Peroxidase (POD) from Horseradish, is horseradish peroxidase, EC number 1.11.1.7, CAS number 9003-99-0, which is extracted from the plant horseradish (horseradish). A heme-containing oxidoreductase that uses hydrogen peroxide or other organic peroxides as electron acceptors to catalyze the oxidation of a variety of organic and inorganic substrates. The enzyme activity of this product is ≥340U/mg.

> This product has a wide range of uses. Since the molecular weight of HRP is small and stable, and the glycosylation modification of HRP itself makes its non-specific binding very low, it is often used to label secondary antibodies, primary antibodies or Streptavidin, etc. for Western blot, ELISA, immunohistochemistry and other detections. HRP is also commonly used in some biochemical tests.

> This product is high-purity HRP in the form of tan powder. The brown color of this product is due to the heme prosthetic group contained in HRP, not due to low purity. This product has RZ≥3, enzyme activity ≥340U/mg, and solubility ≥10mg/ml. RZ (Reinheitszahl) definition: The heme prosthetic group in the HRP molecule has a maximum absorption peak at a wavelength of 403nm, while HRP without the prosthetic group has a maximum absorption peak at a wavelength of 275nm. The A403/A275 ratio is the RZ value. The RZ value is only It reflects the heme content and does not represent the level of enzyme activity. The RZ value of high-purity HRP should be around 3.0. Enzyme activity unit definition: The amount of enzyme required to oxidize pyrogallol to obtain 1.0 mg purpurogallin at 20ºC and pH 6.0 for 20 seconds is defined as one activity unit.

> HRP is a single-chain polypeptide containing four disulfide bonds. It is a glycoprotein composed of a colorless enzyme protein and a brown ferroprotoporphyrin. The molecular weight is about 44kDa, including a polypeptide chain (33890Da), hemoglobin Factors (approximately 700Da) and carbohydrates (approximately 9400Da), of which the carbohydrate content reaches 18%. Different HRP isoenzymes contain different sugars, mainly including galactose, arabinose, xylose, trehalose, mannose, mannosamine and galactosamine. At least 7 HRP isoenzymes have been discovered so far, and the isoelectric points of different isoenzymes are approximately between 3.0 and 9.0.

> Mechanism of action of HRP: HRP is combined with hydrogen peroxide, and the resulting [HRP-H2O2] complex can oxidize a variety of hydrogen donor substrates, and most of the hydrogen donor substrates are colorless reducing chromogenic substrates. Chromogenic substrate (such as DAB, TMB, ABTS, etc.), chemiluminescent substrate (such as luminol, etc.) and fluorescent substrate (fluorogenic substrate, such as Amplex Red, etc.) can generate oxidized colored dyes through reactions. Chemiluminescent or fluorescent products are finally detected qualitatively or quantitatively by appropriate instruments.

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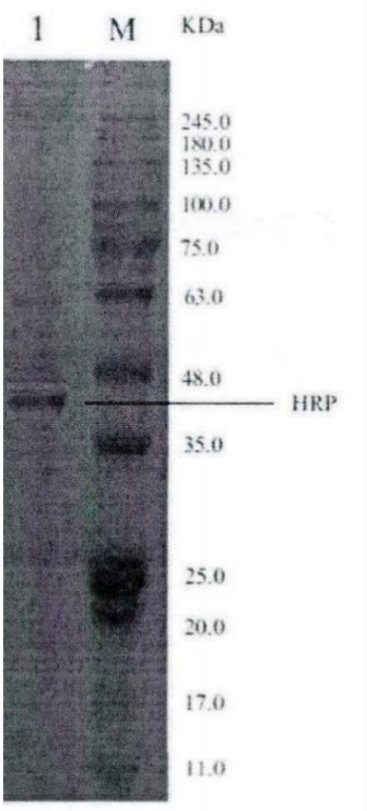
> HRP usually labels antibodies through a variety of ways, such as glutaraldehyde crosslinking mediated by disulfide bond, periodate oxidation and crosslinking directly mediated by amino and sulfhydryl groups. HRP has a smaller molecular weight and higher stability than β-galactosidase and alkaline phosphatase, making it the most ideal antibody marker of the three.

> The optimum pH of HRP is between 6.0-6.5, and the pH is stable between 5.0-9.0. The common inhibitors of HRP include sodium azide, cyanide, L-cysteine, bichromate, hydroxylamines, vanadates, P-aminobenzoic acid and some metal ions such as Cd2+, Co2+, Cu2+, Fe2+, Mn2+, Ni2+, Pb2+.

展示数据 ：（胶图或核磁数据编辑后删除）



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