



# PRODUCT CATALOG

ESCORTING THE ROAD OF ANIMAL HEALTH



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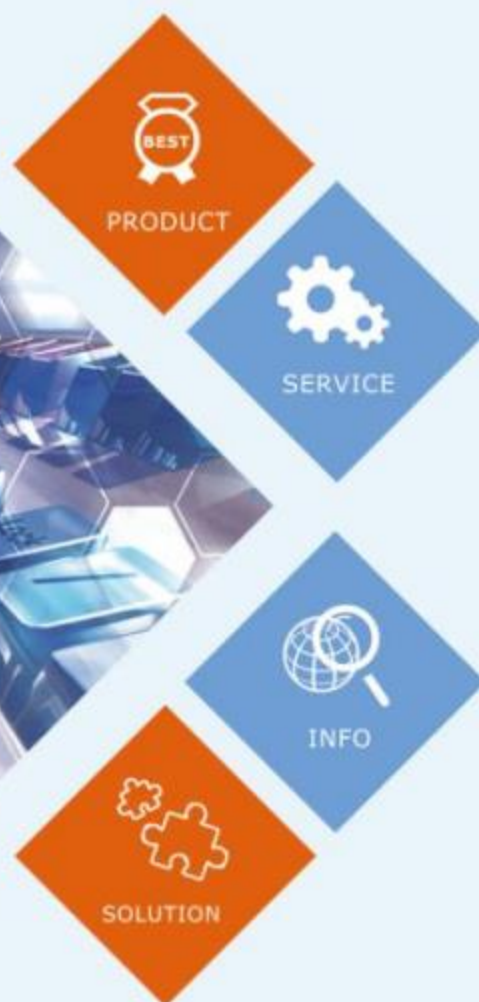
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Guangzhou BioKey Healthy Technology Co.Ltd

# CATALOGUE



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Biokey Health is a high-tech enterprise with integrating R&D, production and sales&marketing in Guangzhou. Since 2003. Bio Key was founded by the "Thousand Talents Program" entrepreneurial team and the overseas senior automation equipment development engineer team.

The company's core team has been in the field of IVD research and entrepreneurship for more than 10 years, and has mastered a wealth of molecular diagnostic POCT industrial application technology, SmartTRF immune detection technology, RT qPCR nucleic acid detection technology and independent research and development capabilities of instruments.

It has a number of independent core technologies in the fields of automation engineering, micro-precision manufacturing, immunofluorescence, nucleic acid detection and gene sequencing. Since its establishment, the company has applied for more than 60 patents and currently has 17 authorized patents. The company has two R&D centers for diagnostic reagents and instruments and equipment, totaling more than 500 square meters; it has established more than 2,000 square meters of GMP workshops and equipment production plants; it has SmartTRF new immune detection technology, nucleic acid detection technology (POCT) and three scientific services.

**Biokey was established in 2003**

We are contracted agents of import companies such as Thermo Fisher/PerkinElmer, ABIGE Healthcare, Leica, Partec, Shimadzu, etc., with an average annual sales of 400 million RMB.

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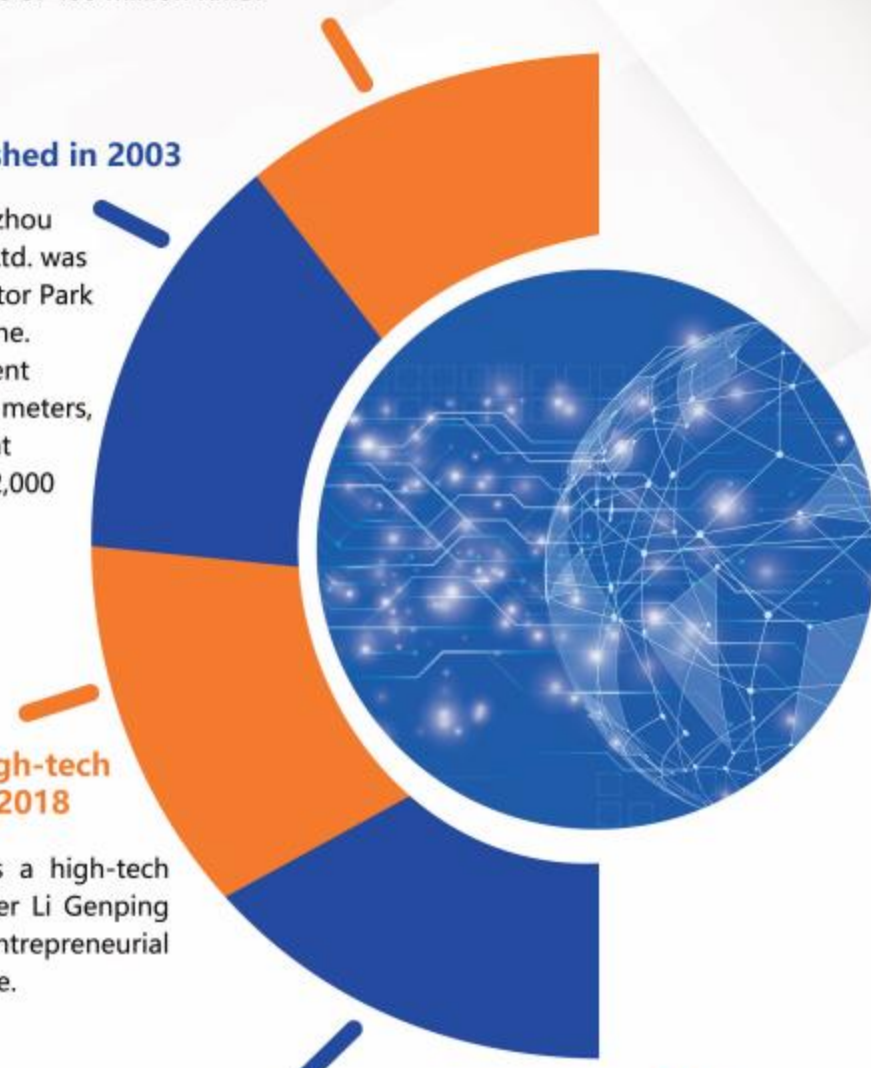
On September 23, 2016, Guangzhou Biokey Health Technology Co., Ltd. was officially established in the Creator Park of Guangzhou Development Zone. It has a research and development center of more than 500 square meters, a GMP workshop and equipment production plant of more than 2,000 square meters.

**Biokey health obtained high-tech enterprise certification in 2018**

Yuanqi Health was certified as a high-tech enterprise, and General Manager Li Genping was awarded the title of "Entrepreneurial Talent" in the Development Zone.

**Biokey health achieves medical device certification in 2021**

Micgene series real-time fluorescence quantitative PCR products have obtained CE certification and CQC certification, and have passed the medical device registration inspection and obtained NMPA certification.



## ● QPCR DEVELOPMENT HISTORY

Real-time fluorescence quantitative PCR is the real-time detection of the PCR process through fluorescent signals during the PCR amplification process. Since there is a linear relationship between the Ct value of the template and the initial copy number of the template in the exponential period of PCR amplification, it can be used as a quantitative basis. Compared with PCR, Real-time qPCR has the advantages of simpler operation, higher sensitivity, better repeatability, etc. At the same time, Real-time qPCR technology advances faster.

In the development of Real-time qPCR technology, the development of quantitative PCR instrument has played a crucial role.

In 1995, Perkin-Elmer successfully developed the Taqman technology.

In 1996, the first fluorescence quantitative PCR detection system appeared, which can analyze the Ct value by detecting the fluorescence intensity of each cycle. Since then, Real-time qPCR has been widely used.

## ● DIFFERENCE BETWEEN REAL-TIME QPCR AND PCR

Most PCR instruments can only perform qualitative experiments, while Real-time qPCR can perform both qualitative experiments and real-time detection of amplification products for quantitative experiments. Compared with PCR, Real-time qPCR has the advantages of high sensitivity, high precision, quantitative ability, fast detection speed, and safety.



## ● PRINCIPLE OF REAL-TIME QPCR

Real-time qPCR is the real-time detection of the PCR process through the fluorescent signal during the amplification process of PCR. Generally speaking, Real-time qPCR is mainly composed of sample stage, gene amplification thermal cycler, micro-fluorescence detection optical system, microcircuit control system, computer and application software. Among them, the working principle of the gene amplification thermal cycle component is roughly the same as that of the traditional gene amplification instrument. Different manufacturers and different models of products use air heating, compressor cooling, semiconductor heating and cooling and other working methods.

The Real-time qPCR products originating from the Biokey healthy Micgene series innovatively adopt the magnetic induction heating mode. Through the unique rotor design, the edge effect problem that cannot be avoided by the traditional heating mode can be avoided to the greatest extent.

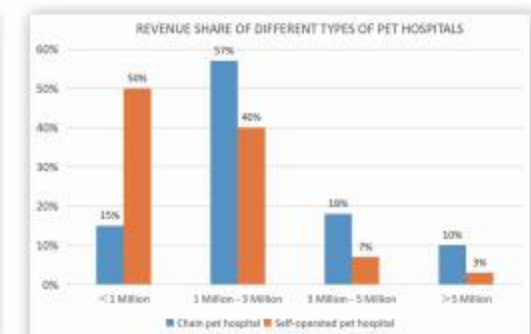
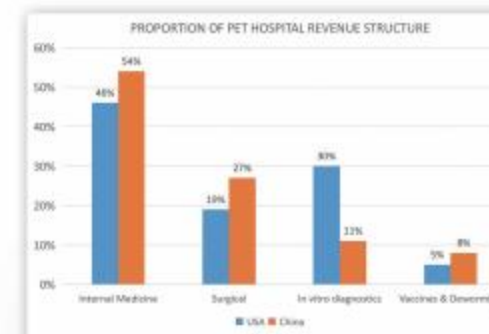
With the gradual improvement of people's quality of life, pets play an increasingly important role in people's lives. In addition, with the improvement of pet owners' concepts and the quality of pet medical care year by year, the accuracy of animal disease diagnosis has gradually moved from the previous unknown to the level of molecular diagnosis.

## ● WHAT CAN MOLECULAR DIAGNOSTICS DO FOR VETERINARIANS?

At present, there are many tools for disease diagnosis that can provide important basic values of animal physiology. For example, a blood cell counter can provide the number and proportion of blood cells, and a biochemical analyzer can measure the basic biochemical values of organs such as the liver and kidneys, as well as blood sugar levels. These basic physiological data can provide veterinarians to make clinical judgments.

The importance of molecular diagnosis is that when there are many diseases with similar symptoms or changes in basic biochemical values, the use of molecular diagnosis technology can effectively provide doctors with the most accurate pathogenic judgment, find appropriate treatment methods, and improve the cure rate.

From the annual income data of pet hospitals, it can be seen that most of the hospitals have an annual income of less than 3 million RMB, whether it is a single store in a chain pet hospital or a single pet hospital. According to market research and analysis, medium-sized pet hospitals can bring 200,000 to 500,000 RMB in revenue each year by introducing molecular diagnostic products, carrying out pet pathogen diagnosis and routine physical examination, and carrying out pathogen screening. Therefore, many pet hospitals have begun to quickly carry out molecular testing projects.



## ● WHAT ARE THE MAIN REASONS FOR NUCLEIC ACID TESTING?

Traditional immunological assays such as fluorescence and colloidal gold. PCR detection has unique advantages in the sensitivity and specificity of diagnosis, especially in the diagnosis and differential diagnosis of diseases such as respiratory diseases, digestive tract diseases and anemia in dogs and cats. And compared with traditional PCR detection, QPCR not only provides concentration value quantification, but also has advantages in sensitivity and accuracy.

## Micgene Nucleic Acid Detection Platform CE certification

- Strict: Human Medicine Standard System
- Simple: One-button touchscreen design
- Automatic: Automated nucleic acid extraction and detection
- Accuracy: Results are comparable to the gold standard ABI 7500



## SOFTWARE INTERFACE



## PARAMETER

MODEL	Micgene 242
SIZE	240x230x260mm(LxWxH)
TEMPERATURE UNIFORMITY	≤ ±0.25℃
TEMPERATURE CONTROL RANGE	Room temperature~99℃
TEMPERATURE CHANGE RATE	Heating rate:>6℃/s; Cooling rate:>4℃/s
LIGHT SOURCE	High power LED
FLUORESCENCE CHANNEL	2 channels
COMMUNICATION MODULE	USB, WIFI wireless printing
DETECTION HOLE POSITION	24 holes
ARRANGEMENT OF HOLES	Rotor
LIGHT SOURCE LIFE	≥ 100,000 hours
TOUCH SCREEN	7-inch color high-sensitivity touch screen

Biokey Health independently develops and produces PCR nucleic acid detection kits, equipped with paraffin oil and UNG/UDG enzyme dual anti-pollution guarantee system, which can realize the rapid detection and identification of various pathogens of small animals in pet hospitals.



	SYMPTOM	DETECTION ITEM	SAMPLE TYPE
RESPIRATORY ORGANS	Feline / Cat	Feline Calici virus (FCV) Feline Herpes virus (FHV) Mycoplasma Feline (MF) Chlamydia Feline (CF) Bordetella Bronchosepticum Feline Herpes virus/Feline Calici virus (FHV/FCV) Chlamydia/Mycoplasma Feline (CF/MF) Four items of cat respiratory tract (FCV/FHV/MF/CF)	Eye, mouth and nose secretions
	Canine / Dog	Canine Distemper virus (CDV) Canine Herpes virus (CHV) Mycoplasma Canine (MC) Chlamydia Canis (CC) Canine Adenovirus type I (CAV1) Canine Adenovirus type II (CAV2) Bordetella Bronchiseptica	Eye, mouth and nose secretions
PRIMUM VIAE	Cat	Feline Parvovirus (FPV) Feline Coronavirus (FCoV) Trichomonas Foetus (TF) Giardia (GD) Feline Parvovirus (FPV) / Feline Coronavirus (FCoV) Trichomonas Foetus (TF) / Giardia (GD)	Rectal secretion
	Dog	Canine Parvovirus (CPV) Canine Coronavirus (CCoV)	Rectal secretion
CAT ASCITES	Cat	Feline Coronavirus (FCoV) Feline Infectious Peritonitis virus / Feline Coronavirus (FIPV/FCoV)	Fuid / Ascites / Cerebrospinal fluid
ANEMIA	Cat	Feline Leukemia virus (FeLV) Feline AIDS virus (FIV)	EDTA whole blood
	Dog	Anemia	Babesiosis
ZOOZONOSIS	Cat	Pet pregnant physical examination Toxoplasma Feline (TOX) Balton hanel(Bh)	Whole blood and rectal secretions
	Dog	Pet pregnant physical examination Toxoplasma Canine(TOX) Canine Leptospirosis (Lep) Leptospirosis/Toxoplasma (Lep/TOX)	Whole blood and rectal secretions



### VARIOUS TESTING ITEMS

Help pet hospitals detect and identify a variety of small animal pathogens.

### FASTER TEMPERATURE CHANGE

Heating and forced airflow cooling through magnetic induction technology for shorter heating or cooling times

### CENTRIFUGAL ROTOR

Rotating aluminium rotors provide excellent temperature uniformity in both dynamic and static operation

### HIGH THROUGHPUT

Veterinarians can test up to 24 samples simultaneously.

### CONCENTRATION VALUE QUANTIFICATION

The test report will show the concentration of the pathogen, which is convenient for judging the condition and can also be used for monitoring the treatment effect.



## MULTIPLE INSPECTION

No need for a professional PCR laboratory, with rapid nucleic acid detection capabilities. A Micgene242 is equivalent to a small PCR laboratory, with multiple test kits, it can meet the common testing needs of pet doctors and reduce experimental costs.



## Feline Respiratory Syndrome

Common causes: Calicivirus, Herpesvirus, Chlamydia, Mycoplasma

Features of cat respiratory symptoms:

1. The mixed infection rate of feline respiratory pathogens is high. Among cats with upper respiratory tract symptoms, 1 in every 4 cats has mixed infection.
2. The symptoms of upper respiratory tract infection are similar, and the treatment methods are different.

Test items: Four items of cat respiratory tract

## Cat stomatitis

Common causes: Calicivirus, Herpesvirus, Feline leukemia virus, Feline immunodeficiency virus

Symptoms of feline stomatitis:

1. Most cats show anorexia or disappear completely. Especially when cats are feeding, there is often a lot of salivation. Some of them shake their heads and whine when feeding, which is a reaction to the stimulation of pain points by the food.
2. Through the oral examination of the cat, the mucous membranes are congested and red, the epithelium is peeled off or ulcerated, and there is an unpleasant putrid smell.

Test items: Calicivirus, Herpesvirus, Feline leukemia virus, Feline immunodeficiency virus

## Diarrhea in dogs and cats

Common causes: Parvovirus, Coronavirus, Tritrichomonas fetalis, Giardia

Characteristics of cat diarrhea symptoms:

Loss of appetite, weight loss, vomiting, anorexia, nausea

Test items: Parvovirus, Coronavirus, Tritrichomonas fetalis, Giardia

## Feline infectious peritonitis

Common cause: Feline Infectious Peritonitis virus/Feline Coronavirus (FIPV/FCoV)

Feline abdominal symptoms characteristics:

Wet type: There is a high-protein exudate in the thoracic and abdominal cavity.

Dry type: Cats will show progressive weight loss, cloudy eyes, pus in the anterior chamber, miosis, and visual disturbances.

Test items: Feline Infectious Peritonitis virus/Feline Coronavirus (FIPV/FCoV)

## Canine Respiratory Diseases

Common causes: Canine distemper virus, canine parainfluenza virus, canine adenovirus type II, Bordetella

Symptoms of canine respiratory disease: Fever, mucus nasal discharge, cough, red and swollen tonsils, accompanied by symptoms such as lack of energy and loss of appetite.

Test items: Canine distemper virus, canine parainfluenza virus, canine adenovirus type II, Bordetella

## Pet comorbidities

Common pathogens: Toxoplasma gondii, Leptospira

Test items: Toxoplasma/Leptospirosis double inspection