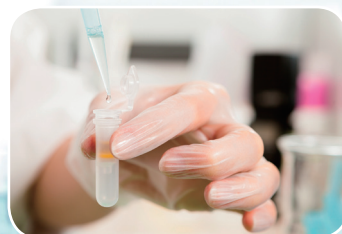


# **Solution for Rapid Extraction and Detection of African Swine Fever Virus**



As a leader in the field of nucleic acid extraction and detection in China, TIANGEN BioTech (Beijing) Co., Ltd. has provided a complete solution for researchers to rapidly and accurately accomplish virus extraction and detection for nearly 20 years. This solution scheme includes all necessary reagents and related instruments from extraction to detection of African Swine Fever Virus, and can be applied to various samples with different levels of detection throughput.



## Company Profile

TIANGEN BioTech (Beijing) Co., Ltd. (hereinafter referred to as TIANGEN) is a biotechnology company specializing in R&D, manufacturing, sales and customer service, and providing customers with a complete solution from sample preservation to nucleic acid extraction and detection.

At present, more than 90% of the molecular biology research laboratories in China are using TIANGEN products, and more than 100,000 experiments are completed every day with the help of TIANGEN kits. As an upstream enterprise, TIANGEN provides stable, reliable and world-class quality products to a wide range of fields such as exit and entry inspection and quarantine, molecular diagnosis, biopharmaceuticals, etc.

The TIANamp Feedstuff Animal DNA Kit developed by TIANGEN has been listed in the industry standard of the Ministry of Agriculture, and has been specified as the designated reagent for the annual comparison and assessment of cattle and sheep-derived feed safety detection system of the Ministry of Agriculture for 6 years in a row, providing a reliable guarantee for preventing the occurrence of mad cow disease in China.

## Key Projects that TIANGEN Supports and Cooperates with



Hand, Foot and Mouth Disease and Influenza Detection



Global Tuberculosis Screening



Prenatal and Early Neonatal Screening



China's Largest Sample Bank of Healthy Population

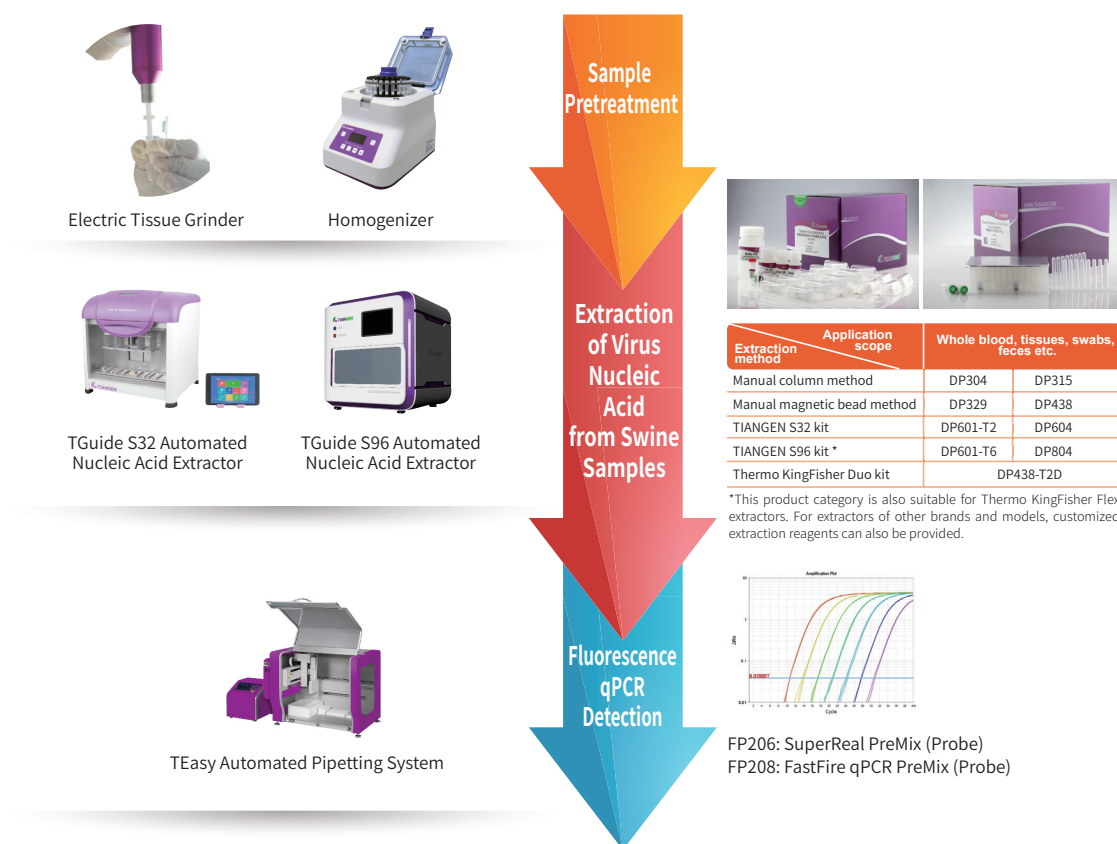


Chinese Bone Marrow Bank



Prevention and Control of Mad Cow Disease

## Complete Virus Detection Solution by TIANGEN



The whole processes from raw materials to manufacturing, production, quality inspection, storage and logistics are completed under the control of German TÜV (Rhine) ISO9001-2008 quality standard system.

## TIANGEN Virus Detection Star Products

### TGrinder Set

#### Product characteristics

- 10-second grinding without the need for liquid nitrogen.
- Strong power with low power consumption.
- Complete set of accessories are included with the package to avoid pollution.
- Easy to use and easy to carry.



Instant and easy to completely grind various materials



Tissues



Muscle

### TGrinder H24 Tissue Homogenizer

#### Product characteristics

- It is widely used for grinding and homogenizing various animal and plant tissues, especially for grinding soil, feces and various medical samples.
- With three-dimensional motion mode, its grinding and homogenizing intensity is 2-5 times that of traditional instruments, with fast speed and high efficiency.
- The circular sample holder design ensures uniform grinding and homogenizing effect, while avoiding contamination.
- The instrument is equipped with a self-protection device, making sure it cannot be started or emergency braked when the protective cover is not closed, thus protecting the safety of laboratory personnel.



### TGuide S32 Automated Nucleic Acid Extractor

#### Product characteristics

TGuide S32 Automated Nucleic Acid Extractor adopts magnetic rod adsorption and transfer method for nucleic acid purification. It applies the 96-deep-well plates, which matches with various magnetic beads nucleic acid extraction reagents, to simultaneously operate the nucleic acid extraction from 1-32 samples (blood, cells, tissues and virus) automatically. TGuide S32 performs the adsorbing, transfer and release of beads and nucleic acid by using the special magnetic rods, thereby improves the automation efficiency.



### TGuide S32 Magnetic Viral DNA/RNA Kit (DP604)

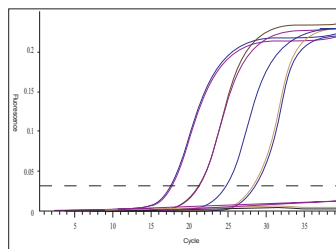
#### Product characteristics

- **Widely applicable:** This kit can be used to extract and purify high-quality virus DNA/RNA from serum, plasma, lymph, cell-free body fluid, cell culture supernatant, urine or various virus preservation solutions
- **Simple and high-efficient:** This kit is perfectly matched with TGuide S32 Automated Nucleic Acid Extractor, and the nucleic acid extraction is completed with special magnetic rod adsorption, transfer and release of magnetic beads. It has high extraction rate of viral DNA/RNA with high purity as well as stable and reliable quality.
- **Downstream applications:** The purified nucleic acid is suitable for various conventional operations, including reverse transcription, PCR, qPCR and other downstream experiments.

### TIANamp Virus DNA/RNA Kit (DP315)

#### Product characteristics

- **High efficiency:** High quality viral DNA and RNA can be obtained by rapid purification with high repeatability.
- **High purity:** Pollutants and inhibitors can be completely removed, so that downstream applications won't be affected.
- **High safety:** No organic reagent extraction or ethanol precipitation.

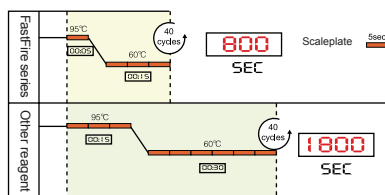


After extracting serum samples containing hepatitis E virus RNA ( $5 \times 10^5$ ,  $5 \times 10^4$ ,  $5 \times 10^3$ ,  $5 \times 10^2$ ,  $5 \times 10^1$  copies/ml) using DP315, the RT-qPCR detection was performed using Quant One Step RT-qPCR Kit(SYBR Green)(FP 303). The results showed that the detection sensitivity could reach  $5 \times 10^1$  copies/ml. The purification and recovery efficiency of the virus RNA is about 85%.

### FastFire qPCR PreMix (Probe)(FP208)

#### Product characteristics

- **The fastest speed:** One of the fastest qPCR reagents (Probe method) on the market.
- **High sensitivity:** Capable to quantify transcripts with low expression abundance.
- **Good stability:** The addition of unique stabilizers and enhancers to the buffer makes the results more accurate, stable and reproducible.
- **Widely applicable for RT-qPCR instruments:** It is not only suitable for fast RT-qPCR instruments, but also suitable for common RT-qPCR instruments.



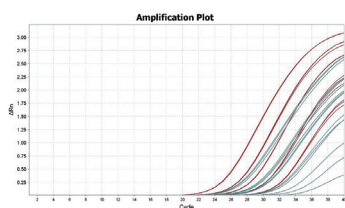
Currently the fastest Probe reagent and the reaction time can be shortened by **1000 sec.**



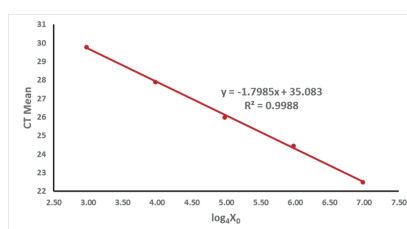
## Examples of African Swine Fever Virus Detection

African swine fever virus nucleic acid was extracted using TGuide S32 Magnetic Viral DNA/RNA Kit (DP604), and detected by RT-qPCR using FastFire qPCR PreMix (Probe) (FP208) or a similar qPCR detection kit from Company A, together with the African swine fever virus primers and probes. Three technical repeats of qPCR reactions were performed on ABI QuantStudio 5, with the standard products of African swine fever virus diluted to a gradient of 1, 4, 16, 64, 256 times of the stock solution. The results showed that the virus DNA extracted by TGuide S32 Automated Nucleic Acid Extractor and the matched extraction reagents had a good yield, which could meet the requirements of qPCR and other subsequent experiments. Moreover, FastFire qPCR PreMix (Probe) (FP208) results show higher sensitivity, better repeatability and better linearity of gradient dilution than that of the similar detection reagents of Company A.

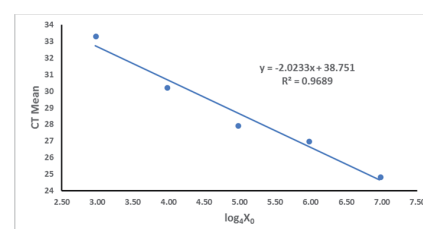
### Amplification Curves and Standard Curves for qPCR Detection of Swine Fever Virus DNA



Red lines: qPCR amplification curves of TIANGEN products.  
Green lines: qPCR amplification curves of company A's products



qPCR standard curve of TIANGEN products.



qPCR standard curve of company A's products.

### qPCR detection results of African swine fever virus DNA

TIANGEN	CT			CT Mean	Company A	CT			CT Mean
Stock solution	22.465	22.574	22.510	22.517	Stock solution	25.086	24.841	24.683	24.870
Diluted by 4 times	24.514	24.437	24.496	24.482	Diluted by 4 times	27.174	26.810	27.086	27.023
Diluted by 16 times	25.969	25.989	26.111	26.023	Diluted by 16 times	28.145	27.681	28.073	27.966
Diluted by 64 times	27.970	27.934	27.848	27.917	Diluted by 64 times	30.496	30.258	30.007	30.254
Diluted by 256 times	29.777	29.833	29.766	29.792	Diluted by 256 times	33.266	34.886	31.960	33.371

### List of Related Products

Nucleic acid extraction				Sample pretreatment		
Product name	Cat. no.	Specification		Product name	Cat. no.	Specification
TIANamp Genomic DNA Kit	DP304-02	50 preps		The 3rd Gen High Speed TGrinder	OSE-Y30	1 set
	DP304-03	200 preps		The 3rd Gen Low Speed TGrinder	OSE-Y40	1 set
TIANamp Virus DNA/RNA Kit	DP315	50 preps		The 3rd Gen Variable Speed TGrinder	OSE-Y50	1 set
	DP329-01	50 preps		TGrinder H24 Tissue Homogenizer	OSE-TH-01	1 set
Magnetic Blood Genomic DNA Kit	DP329-02	200 preps		Quantitative determination		
	DP329-03	1000 preps				
	DP438-01	50 preps		Product name	Cat. no.	Specification
Magnetic Viral DNA/RNA Kit	DP438-02	200 preps		SuperReal PreMix (Probe)	FP206-01	20 µl × 125 rxn
	DP438-03	1000 preps			FP206-02	20 µl × 500 rxn
Magnetic Viral DNA/RNA Kit	DP438-T2D	96 preps			FP206-03	20 µl × 5000 rxn
TGuide S96 Magnetic Viral DNA/RNA Kit	DP804	96 preps			FP208-01	20 µl × 125 rxn
TGuide S32 Magnetic Blood Genomic DNA Kit	DP601-T2	96 preps		FastFire qPCR PreMix (Probe)	FP208-02	20 µl × 500 rxn
TGuide S32 Magnetic Blood Genomic DNA Kit	DP601-T6	4 × 96 preps				
TGuide S32 Magnetic Viral DNA/RNA Kit	DP604	96 preps		TEasy AP 400s Automated Pipetting System (standard single channel)	OSE-AP400s	1 set
TGuide S32 Automated Nucleic Acid Extractor	OSE-S32	1 set		TEasy AP 600s Automated Pipetting System (standard single channel)	OSE-AP600s	1 set
TGuide S96 Automated Nucleic Acid Extractor	OSE-S96	1 set				

#### TIANGEN BIOTECH(BEIJING)CO.LTD

Address: Building C7-3, Zhongguancun Dongsheng Science Park, NO.66 Xi Xiao Kou Road, Haidian District, Beijing, China  
E-mail: export@tiangen.com Website: www.tiagen.com/en  
Post Code: 100192 Tel: +86 10 59822724