

# **Shenzhen ReeToo Biotechnology Co., Ltd.**

## **Category:**

Best Startup

## **Company Name:**

Shenzhen ReeToo Biotechnology Co., Ltd.

## **Turnover and/or Funding:**

The turnover is 50 million RMB, and the cumulative financing amount exceeds 500 million RMB. Reetoo BioTech's core investors include professional institutions such as LYFE Capital, CMB International, Legend Star, Shenzhen Investment Holdings, Lanchi Ventures, and CAS Investment, providing continuous support for the company's technological innovation and global expansion.

## **Sub-Category:**

Biotechnology

## **Corporate history (creation, key milestones, main funding,...)Information on Condition / Disease and need for solution / product (prevalence, existing treatments / solutions):**

Company Introduction: Reetoo Biotech Co., Ltd., Shenzhen, China

Established in 2017, Reetoo Biotech Co., Ltd. is a national high-tech enterprise dedicated to the integration of artificial intelligence (AI) and medical diagnostics. The company focuses on the R&D, production, and sales of AI-powered gynecological diagnostic products and has established China's first AI-driven medical laboratory innovation center.

Key Products: AI-powered gynecological testing devices.

Milestones:

In 2017, the founding team identified challenges in gynecological testing-low automation, high manual reliance, and long reporting cycles-and decided to leverage AI for intelligent diagnostic upgrades.

In 2020, Reetoo launched the F600, the first fully automated vaginal discharge analyzer

for primary care, based on its DeepCell engine. CFDA-certified, it filled a global gap in intelligent devices. Deployed in Yunnan's Nujiang clinics (where 30% of vaginitis cases were misdiagnosed due to microscopy shortages), the F600 revolutionized diagnostics and expanded to 32 Chinese provinces.

In 2021, the F2000 debuted for tertiary hospitals, adding staining and pre-processing to boost speed (90 tests/hour, 500 cases/day) and accuracy. It outperformed manual microscopy in trichomonas/fungal detection, won AI competitions, and earned the "AI Excellence Innovation Award."

In 2023, Reetoo's AI-powered reproductive tract microecology pipeline automated sample-to-report processes, supporting Gram-stained analysis (e.g., bacterial density, Nugent score). With 90% concordance to manual microscopy, it's installed in 2,000+ Chinese hospitals.

In 2025, CE-certified, Reetoo entered Eurasian markets with multilingual reports (Arabic, English, French). Future plans include deepening AI in cervical cytology and pathogen detection for global expansion.

Dr. Qiaoliang Li, Founder of Reetoo, stated, "Our goal is not just technological leadership but ensuring women globally access the diagnostic precision of top-tier hospitals. When technology transcends development gaps and diagnostics are no longer constrained by geography or resources, every Reetoo innovation is a solemn commitment to global women's health equity."

From the F600 to the F2000, and now the gynecological microecology pipeline, Reetoo has progressed from filling gaps to setting standards, from serving China's grassroots to the global stage. Each technological iteration embodies "medical democratization"-not a commercial race but a global movement for dignity, ensuring every woman, regardless of location, can safeguard her health.

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According to WHO, 83% of married women experience gynecological conditions [10], at some point, with over 40% suffering recurrent infections (CDC, 2021). Rising prevalence of diseases like vaginitis has surged demand for accurate screening. Traditional morphological diagnostics rely heavily on manual microscopy, demanding high clinical experience and yielding inconsistent results due to labor-intensive processes and a shortage of experienced clinicians. Reetoo's vaginal discharge analyzer, integrating AI morphological analysis, automatically identifies 10 pathogen types and biochemical indicators, achieving over 90% accuracy. The DeepCell engine matches the expertise of

5-10-year experienced clinicians and continuously improves, enhancing diagnostic efficiency and accuracy, providing an efficient, precise, and intelligent solution for clinics.

## **History of the development of the solution/product (Intellectual Property, preclinical and clinical datas, development collaborations):**

Reetoo Biotech holds over 600 intellectual property (IP) rights. Notably, our vaginal discharge analyzer boasts fully independent IP, with over 150 patents. Among these, 149 are publicly disclosed, including 84 invention patents, 56 utility model patents, and 15 design patents. We have 86 authorized patents and 10 software copyrights.

In 2019, Reetoo's F600 underwent clinical validation at Sun Yat-sen Memorial Hospital and Xiangyang Central Hospital, completing 341 and 400 clinical trials, respectively. The results demonstrated an overall accuracy exceeding 90% for both studies.[7][8]

In 2020, Reetoo collaborated with Nanfang Hospital of Southern Medical University on a multicenter study titled "\"Application and Evaluation of the AI Deep Learning DeepCell Engine in Automated Semen and Vaginal Discharge Testing.\"" This study evaluated the instrument's performance in detecting low-concentration specimens, precision repeatability, and consistency with clinical gold standards using both traditional methods and the AI DeepCell engine. The multicenter study is ongoing. That same year, the F2000 completed 398 clinical trials at Shenzhen People's Hospital and Dongguan Donghua Hospital, achieving an overall accuracy exceeding 90%.[9]

In 2022, Luohu Hospital Group Medical Laboratory in Shenzhen published a study titled "\"Performance Evaluation and Analysis of a Fully Automated Vaginal Discharge Analyzer,\"" validating the RT-F600's test repeatability, carryover rate, automatic dilution function, consistency with manual microscopy, dry chemistry test accuracy, detection limits, and consistency with reference instruments. The overall compliance rate exceeded 90.00%, meeting clinical requirements.[4]

In the first half of 2025, Reetoo partnered with France's BIOPATH laboratory to validate its gynecological microecology pipeline in international markets. In China, Reetoo collaborated with over ten top-tier hospitals, including Xiangya Third Hospital of Central South University, on a multicenter study to explore the impact of different slide preparation methods on vaginal discharge test results and the feasibility of integrating AI image recognition into traditional microecological evaluation systems. The study aims to provide detailed diagnostic references for unresolved issues in current vaginal microecological evaluations, such as isolated leukocytosis, abnormal flora, and CV. This project is currently ongoing.

As a leading entity, Reetoo Biotech has collaborated with numerous authoritative medical institutions to draft and publish China's first \"Standardized Guidelines for Clinical Testing and Reporting of Vaginal Discharge\"[1] and \"Expert Consensus on Automated Testing and Reporting of Vaginal Discharge.\"[2] These initiatives establish standardized testing protocols, reporting interpretations, and quality control systems, laying the foundation for automated, intelligent, and standardized cellular morphology diagnostics in China and promoting industry standardization.

## **Why this drug or device is innovative, the broad implications for future research, and/or how it will improve the human condition:**

Reetoo Biotech pioneered the development of intelligent vaginal discharge testing devices, successfully filling the global gap in intelligent gynecological diagnostic equipment.

### **Setting Industry Standards:**

Reetoo collaborated with dozens of authoritative medical institutions to draft and publish China's first \"Standardized Guidelines for Clinical Testing and Reporting of Vaginal Discharge,\"[1] \"Expert Consensus on Automated Testing and Reporting of Vaginal Discharge,\"[2] and a group standard.[3]

Globally, clinical morphological diagnostics predominantly rely on manual processes, severely limiting diagnostic accuracy and efficiency.

### **Clinical Value and Impact: Enhancing Global Women's Health and Quality of Life**

Over 90% of married women worldwide experience gynecological conditions, with vaginal infections and human papillomavirus (HPV) infections being highly prevalent (85%) globally (CDC, 2021). Insufficient early screening coverage results in over 600,000 new cervical cancer cases annually.[6]

### **Traditional Diagnostic Challenges:**

**Low Efficiency:** Manual microscopy relies on subjective experience, taking 15-20 minutes per sample, with missed detection rates as high as 15%-20%.

**Poor Patient Compliance:** Long testing cycles and delayed reporting (typically 24-48 hours) lead to follow-up rates below 50%.

**Lack of Standardization:** Varied laboratory procedures result in poor result comparability and increased misdiagnosis rates.

### **Core Clinical Value of Reetoo's Device:**

**Full Automation, Reduced TAT:** Integrating optical imaging, nanoscale focusing scanning, and AI deep learning, Reetoo's fully automated vaginal discharge analyzer automates the entire process from sample loading to reporting, reducing test time to 3

minutes per sample-a 10-fold efficiency improvement.

Early Screening and Recurrence Monitoring: Essential for gynecological check-ups, pre-pregnancy, and prenatal screenings, it reduces neonatal preterm birth rates and mother-to-child transmission risks. For recurrent vaginitis patients, dynamic microecological monitoring guides precise treatment, reducing recurrence rates by 40%.

Standardized Cross-Regional Healthcare: The DeepCell engine's accuracy approaches that of 5-10-year experienced clinicians, with continuous updates enhancing diagnostic efficiency and accuracy. It addresses global healthcare resource disparities, particularly in primary care settings.

Reetoo's intelligent vaginal discharge analyzers have been installed in over 2,000 Chinese hospitals, serving 10 million women annually. Plans include installing 10,000 units globally within five years, benefiting 50 million women, enabling early disease detection and treatment, and supporting WHO's cervical cancer elimination strategy.

Globally, intelligent gynecological diagnostic devices safeguard women's health rights, promote gender equality, and enhance quality of life. Together, we can empower more women, fostering a healthier, more equitable future.

### **Please provide appropriate references (PubMed, Abstract, Website):**

[1] Group on Hematology and Body Fluids, Society of Laboratory Medicine, Chinese Medical Association; Collaborative Group on Infectious Diseases, Society of Obstetrics and Gynecology, Chinese Medical Association. Standardized Guidelines for Clinical Testing and Result Reporting of Vaginal Discharge [J]. National Medical Journal of China, 2023, 103(1): 10-17. DOI: 10.3760/cma.j.cn112137-20220804-01687.

[2] Group on Hematology and Body Fluids, Society of Laboratory Medicine, Chinese Medical Association. Expert Consensus on Automated Testing and Reporting of Vaginal Discharge [J]. Chinese Journal of Laboratory Medicine, 2023, 46(5): 439-444. DOI: 10.3760/cma.j.cn114452-20221207-00723.

[3] Guangdong Medical Device Management Association. Group Standard for \"Vaginal Discharge Testing Device\" [S]. 2022.

[4] Luo YP, Liu LY, Zhang XM, et al. Performance Evaluation and Analysis of a Fully Automated Vaginal Discharge Testing Device [J]. International Journal of Laboratory Medicine, 2022, 43(7): 837-841. DOI: 10.3969/j.issn.1673-4130.2022.07.015.

[5] Shenzhen Reetoo Biotech Co., Ltd. (n.d.). Official Website. Retrieved from: <http://www.reetoo.com.cn/>.

[6] WHO Cervical Cancer Elimination Initiative. Retrieved from:  
<https://www.who.int/initiatives/cervical-cancer-elimination-initiative>.

[7] Xiangyang Central Hospital. Clinical Trial Report of Medical Device [R]. Xiangyang: Xiangyang Central Hospital, 2019.

[8] Sun Yat-sen Memorial Hospital, Sun Yat-sen University. Clinical Trial Report of Medical Device [R]. Guangzhou: Sun Yat-sen Memorial Hospital, Sun Yat-sen University, 2019.

[9] Shenzhen People's Hospital; Dongguan Donghua Hospital. Clinical Trial Report of Medical Device [R]. Shenzhen, Dongguan: Shenzhen People's Hospital, Dongguan Donghua Hospital, 2020.

[10]<https://www.singlecare.com/blog/news/hpv-statistics/>

## **References File Document upload:**

**1 Reetoo BioTech\_ Standardized Guidelines for Clinical Testing and Result Reporting of Vaginal Discharge J.pdf**

**2 Reetoo BioTech\_ Expert Consensus on Automated Testing and Reporting of Vaginal Discharge J.pdf**

**4 Reetoo BioTech\_ Performance Evaluation and Analysis of a Fully Automated Vaginal Discharge Testing Device J.pdf**

**3 Reetoo BioTech\_ Guangdong Medical Device Management Association Group Standard for Vaginal Discharge Testing Device S.pdf**

**7 Reetoo BioTech\_ Xiangyang Central Hospital Clinical Trial Report of Medical Device R.pdf**

**8 Reetoo BioTech\_ Sun Yatsen Memorial Hospital Sun Yatsen University Clinical Trial Report of Medical Device R.pdf**

**9 Reetoo BioTech\_ Shenzhen Peoples Hospital Dongguan Donghua Hospital Clinical Trial Report of Medical Device R.pdf**