

Adjuvant-Free, No Stress Response: A Potent Live Vector Rabies Vaccine for Pets



曲福润
IFFERENCE

- **Headquarters:** Hangzhou, China
- Dedicated to establishing a globally leading biologics development platform based on viral recombinant technology.
- Seeking global partners to develop, register and commercialize *DIFF-Rab*.

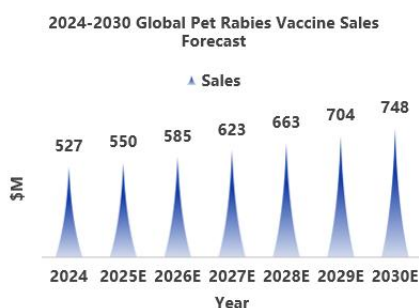
Company Profile

- Through advancements in viral-attenuation techniques, targeted gene delivery systems, and vector-controllability mechanisms, DIFF's platform—built upon recombinant virus technology—enables broad therapeutic applications across vaccines, oncology treatments, gene therapy approaches, and antiviral drug development.
- DIFF's IP portfolio comprises **80+ patent applications**, with 10+ international PCT applications.

Product Overview

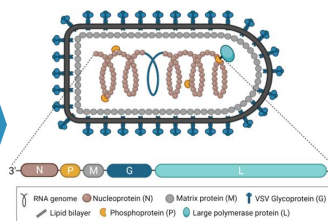
- **Uniquely adjuvant-free formulation**, eliminating adjuvant-related side effects for safer vaccination in young pets
- Utilizes VSV vector technology with substituted rabies virus G protein, eliciting neutralizing antibody titers **>20IU** after single immunization
- High-titer virus production (10^9 TCID₅₀) in Vero cells enables cost-effective manufacturing with tightly controlled quality standards

Beyond Homogeneous Competition: A \$100M+ Blockbuster Opportunity



Currently, the global pet rabies vaccine market is experiencing steady growth, with market size reaching several hundred million dollars. However, **all commercially available products are inactivated vaccines**, which continue to face the challenges:

- **Inducing stress responses in animals following vaccination**
- **Insufficient antigen content, resulting in lower neutralizing antibody titers and shortened duration of protection**



Structure and Genome of Vesicular Stomatitis Virus (VSV)

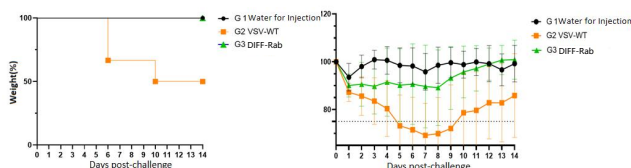
DIFF-Rab uses VSV as a vaccine vector and offers multiple advantages:

- **Adjuvant-free formulation**, eliminating stress reactions after vaccination
- **Highly efficient antigen expression**, inducing robust and long-lasting immune responses
- **Single-dose administration**, delivering effective and dependable protection

Data source: QY Research

Product Highlights

Survival rate and body weight changes in mice after intracranial inoculation

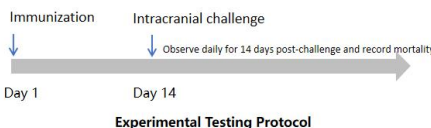


The World's Only VSV-Vectored Rabies Vaccine Proven to Overcome Neurotoxicity

Determination of Rabies Vaccine Potency Using the NIH Test

Group	Volume (ml)	Dilution	Dilution Method
1	25	1:25 (5 ⁻²)	1ml (Stock Solution) +24ml
2	20	1:125 (5 ⁻³)	4ml (1:25) +16ml
3	20	1:625 (5 ⁻⁴)	4ml (1:125) +16ml

Dilution Method for Test Vaccine and Reference Vaccine

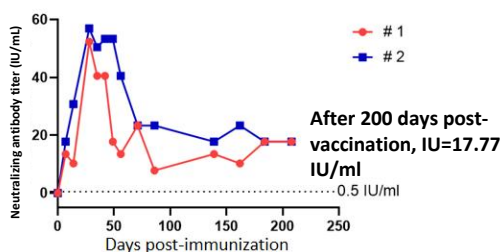


Batch Number	Dilution	Number of Deaths	Number of Survivors	IgG _{0.5}	Potency (IU/dose)
Rabies Inactivated Vaccine A	1:625	13	3		
	1:125	4	12	2.41	9.8
	1:25	0	16		
DIFF Rab	1:625	9	7		
	1:125	0	16	2.72	20.1
	1:25	0	16		
Reference Vaccine	1:625	14	2		
	1:125	8	8	2.06	4.4
	1:25	3	13		

Survival Rate and Potency of Mice Post Rabies Vaccination and Challenge

Higher immunogenicity than inactivated vaccines

Neutralizing Antibody in Cat Serum Following Immunization with DIFF-Rab



Rapid onset of action, high immunogenicity, suitable for both canine and feline use

DIFF-Rab vs. Inactivated Rabies Vaccines

Comparison Dimension	Inactivated Rabies Vaccine	DIFF Rab
Safety	Adjuvants may over-stimulate the immune system, triggering stress responses.	Contains no adjuvants, avoiding post-vaccination stress in pets.
Compatibility	Incompatible with canine attenuated vaccines; cannot be developed into multivalent rabies vaccines.	Universal for both dogs and cats; suitable for development of rabies combination vaccines (e.g., with distemper/parvovirus).
Efficacy	Weak immunogenicity; requires multiple booster doses.	Rapid onset of immunity with high immunogenicity.
Production Capacity	Outdated manufacturing processes; high production costs.	High viral titer production, low cost, and strictly controlled quality.