RetroMAD1: A Recombinant Broad-Spectrum Antiviral Therapeutic Protein



Retrocyclin (monkey):

- Binds to viral glycoproteins and interferes with virus entry MAP30 (bitter gourd):
- A ribosome-inactivating protein (RIP) impairs viral mRNA translation Inhibits the viral integrase enzymatic activity **Dermaseptin-1 (frog):** Prevents fusion and uncoating of virus.

Features

- **Broad-spectrum antiviral** many human and animal (RNA & DNA viruses)
- **Oral delivery** easy administration
- **Odorless, colorless and tasteless** tested in cats, dogs and humans
- **Temperature stable** does not require cold chain transport
- **Easy to manufacture** expressed as *E.coli* inclusion bodies
- **Non-toxic** safe even at 300mg/kg (subcutaneous administration)
- **Non-immunogenic** does not induce immune response
- **No bioaccumulation** safely exits the body within 12h of consumption
- **IP protection** patent granted in America, Australia, Singapore & Malaysia

PHARMACOKINETICS – PRIMATE STUDIES



Concentration of RetroMAD1 in the blood serum starts to increase from 30 min and

oValence

peaks at 2h

Relative bioavailability in monkeys is 39.1%



- RetroMAD1 displayed strong inhibitory activity against all 4 serotypes of DENV
- RetroMAD1 displayed significant antiviral activity against all four serotypes of DENV

Looking to connect with

CROs for preclinical studies

Pharmaceutical Companies

Potential collaborators

Investors / Partners

- The subcutaneous administration of RetroMAD1 for 5 consecutive days led to 50% survival rate, while all untreated mice died by day 7. * Studies carried out by Dr. Alonso's Lab at NUS
- Application of technology for Dengue: Potential Therapeutic & Prophylaxis for DENV 1-4 by targeting both symptomatic and asymptomatic/pre-symptomatic patients

Success against companion animal viruses						
Virus Indication ACUTE	Sample Size	Standard Treatment Survival Rate (%)	RetroMAD1 + Standard Treatment Survival Rate (%)	<i>In Vivo</i> Viral Load Reduction (%)	In Vitro Viral Load Reduction (%)	v
Canine Parvovirus 2 (CPV2)	199	Between 20-70	80.38	94.75	N/A	V
CHRONIC	Sample Size	Standard Treatment Symptomatic Recovery	RetroMAD1 + Standard Treatment Symptomatic Recovery Time (months)	Average In-Vivo Viral Load Reduction (%)	Average In-Vitro Viral Load Reduction (%)	
Feline Immunodeficiency Virus (FIV)	71	Common recurrence / Never recovers completely	Between 1 to 12	80.45	91.84	
Feline Leukemia Virus (FeLV)	122	Common recurrence / Never recovers completely	Between 1 to 12	90.90	100.00	

Significant recovery of Gingivitis and Feline upper respiratory disease (FURD) were observed over 1-6 months after starting RetroMAD1 treatment.





