RecombiVirus Peste des petits ruminants (PPR) Vaccine, Antibodies and ELISA Kits

RecombiVirus™ series of ELISA kits are 2nd generation quantitative or qualitative ELISA kits to detect **PPR virus specific antibodies** using recombinant and highly purified viral antigens. Advantages of **RecombiVirus Q™** ELISA kits:

- **Recombinant viral antigens**: Safe, no risk of contamination
- **Qualitative or Quantitative**: Use single Positive antibody calibrator at 100 U/ml for +ve or –ve samples (Qualitative) or use full standard curve to measure antibody concentration in vaccinated or infected animals (Quantitative).
- **Rapid tests:** assay time ~105 mins
- **Sensitive**: higher sensitivity allows sample dilution of 1:100 or more. Less background. Antibody detection to <1.0 ng/ml.
- **Convenient**: Room temp incubations, all reagents in stable solution format; strips of 8-wells for maximum usage
- **Stable**: 1 year shelf life
- **PPR-NP antibody** ELISA kit can be used to assess the antibody status of vaccinated animals or infection in non-vaccinated animals. .

Assay Procedure: Arrange required number of strips on the plate.

Step 1. Add **100µl of pre-diluted antibody standards** and **100 ul samples** (diluted 1:100 or higher) into respective wells. Mix gently and incubate at room temp for **60 mins** (25-28oC; no shaking necessary).

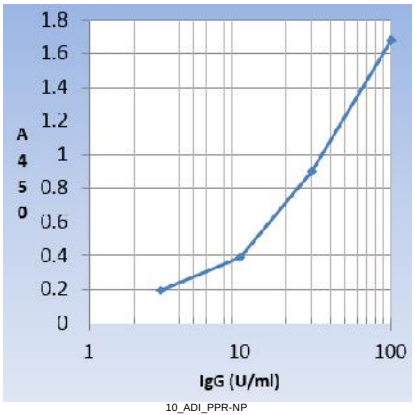
Step 2. Aspirate well contents and wash 3X with wash buffer. Add 100 ul of supplied antibody-HRP Conjugate into all wells; mix gently and incubate at RT for 30 mins.

Step 3. Aspirate or wash 5x with wash buffer. Tap plates over paper towels. Add 100 ul of TMB Substrate. Mix gently and Incubate for 15 min at RT. Blue color develops in positive wells.

Step 4. Add 100 ul of stop solution into each well and mix gently (blue color turns yellow). Measure yellow color at 450 nm. Results are compared to Cut-off control and expressed as +ve and –ve or antibody values determined from Antibody standard curve and expressed as U/ml.

Calculation of Results

Results can be expressed as simple –ve and +ve as compared to Cut-off standards or PPR antibody concn (U/ml) determined from standard curve.



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List of Porcine circovirusELISA Kits available from ADI.

Product details, data sheets, and pricing available (http://4adi.com/commerce/catalog/spcategory.jsp?category_id=2793)

	ELISA kit Description	Species	Cat#
PPR NP IgG	Recombivirus Peste des petits ruminants NP IgG (PPR-NP) ELISA kit, 96 tests	Goat/Sheep	RV-400800-1
		Pig/Swine	RV-4008100-1
		Camel	RV-4008120-1
		Bovine/Cow	RV-4008130-1

PPR Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies:

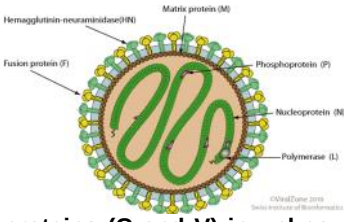
PPR Type	Cat#	Product Description	Product Type
PPR	PPR11-C	Recombinant Peste des petits ruminants (PPR) control for western blot	Western control
	PPR11-S	Anti-Peste des petits ruminants (PPR) protein antiserum	Antiserum
	PPR15-R-10	Recombinant (E.coli) Peste des petits ruminants (PPR) protein (>95%, his-tag, 58 kDa) purified	Recombinant protein
	PPR15-P	Peste des petits ruminants NP (PPR-NP) peptide 421-455 aa, >90% pure (specific for PPR protein) (corresponding rinder pest peptide #RPR17-P)	Pure peptide
	PPR16-P	Peste des petits ruminants NP (PPR-NP) peptide 456-490 aa, >90% pure (specific for PPR protein) (corresponding rinder pest peptide #RPR18-P)	Pure peptide
RPR (Rinder pest)	RPR17-P	Rinder Pest NP (RPR-NP) peptide 421-455 aa, >90% pure (specific for rinder pest NP protein and corresponding peptide for PPR15-P)	Pure peptide
	RPR18-P	Rinder Pest NP (RPR-NP) peptide 456-490 aa, >90% pure (specific for rinder pest NP protein and corresponding for PPR16-P)	Pure peptide
	RPR12-A	Anti-Rinder Pest NP (RPR-NP) peptides (421-490aa) antiserum	Antiserum
	RPR12-P	Rinder Pest NP (RPR-NP) peptides (421-490aa) for ELISA	Antigen Peptide

Peste des petits ruminants (PPR)-General Information

Peste des petits ruminants (PPR) also known as viral plague of small ruminants, is a contagious disease caused by a morbillivirus in the family of **paramyxoviruses**, which is related to **rinderpest, measles and canine distemper**. It is also known as '**goat plague'** since it is a viral disease of goats and sheep. Generally characterized by fever, sores in the mouth, diarrhea, pneumonia, and sometimes death. Cattle and several wild ruminants have been infected most often experimentally, but goats and sheep are the usual targets. Geographically it spread across Africa, Middle East, and the Indian subcontinent and by 2008 it invaded Morocco.

Although the virus does not survive outside of the host body for long time it is believed to transmit through secretion from tears, nasal discharge, secretions from coughing, and in the faeces of infected animals. Therefore, close contact between animals, especially through inhalation of fine droplets that are released into the air when affected animals cough and sneeze will spread the disease. Water, feed troughs, and bedding can also be contaminated with secretions and become additional sources of infection, since animals excrete the virus before showing signs of the disease, it can spread by movement of infected animals. On the other hand, **Rinderpest is known as the disease of large ruminants** or a disease of cloven-hoofed animals (hoof split into two toes), caused by morbillivirus (a genus of Paramyxoviruses). It was historically widely distributed throughout Europe, Asia, and Africa but it never established itself in North America, Central America, the Caribbean Islands, South America, Australia, or New Zealand**. It is believed to be the most devastating livestock disease** with high morbidity and mortality rate; claiming millions of undomesticated ruminants and cattle causing large-scale famines, economic loss and ecological disturbances.

PPR Virus (PPRV) is an enveloped, negative-sense single-stranded RNA virus ~16 Kb. Its genome codes for six **structural (large, phosphoprotein (P), hemagglutinin (H), nucleoprotein, fusion (F), and membrane proteins (M) and two non-structural proteins (C and V) in unknown functions.** N, P, and L are required for reconstituting viral RNA polymerase activity; M protein is required for particle formation and budding, and the two surface glycoproteins, H and F, are required for attachment and entry into the host cell. Three distinct lineages have been defined, aptly named **1, 2, and 3. Lineages** 1 and 2 are the African strains, and Lineage 3 is the Asiatic. Despite its extreme lethality, the virus is particularly fragile and is quickly inactivated by heat, desiccation and sunlight but remains viable for long periods in chilled or frozen tissues. The virus does not have a carrier phase. It can be transmitted via direct contact, contaminated water, and through short distances in aerosolized bodily fluids through the air. The close packing and herding of domestic cattle also aid in the virus transmission. The disease may be suspected with sudden onset of fever, nasal discharges, diarrhea in sheep and goats, while cattle are uninvolved.



The **symptoms of PPR** are very similar to those of rinderpest: fever, anorexia, depression, nasal and ocular discharges, difficult respiration, necrotic lesions on gum, lips and tongue resulting in salivation, erosions on the nasal mucosa and finally diarrhea. During the later stages of the disease caused by

PPR, formation of small nodular skin lesions on the outside of the lips around the muzzle and the development of pneumonia is observed but not in rinderpest. Morbidity up to 100 % and mortality rates between 20 and 90 % are common, except in endemic areas or when mild disease occurs. Pregnant animals may abort. The prognosis of PPR is poor and death can occur within five to ten days of the onset of fever. Young animals are most severely affected, especially goats more than sheep. Morbidity is often 100% and mortality is up to 90% in epidemic areas, but in endemic areas morbidity is low and clinical signs are often mild. There are no known health risks to humans working with PPRV as no report of human infection with the virus exists.

PPR diagnosis is performed by RT-PCR, virus isolation, and the presence of antigen or antibodies (serology) by ELISA. Typically, recombinant PPR NP protein is used for ELISA.

At present, only **attenuated rinderpest and PPR vaccines** (Nig75/1) that has been

are available for providing temporary protection for three to four years against PPR. Re**combinant capripox-based PPR vaccines** that are able to protect against both capripox and PPR have also been reported but not available commercially. The Food and Agriculture Organization (FAO) of the United Nations, along with the leading veterinary officials of rinderpest-affected countries and international experts on rinderpest, formulated a proposition for worldwide eradication of rinderpest, which eventually evolved into the Global Rinderpest Eradication Program (GREP). Because of the available PPR vaccines, no **DIVA test** is possible.