



While West Nile virus (WNV) has had significant outbreaks throughout the world since it was first identified, commercially available assay kits for the detection of WNV protease inhibitors have been non-existent. Until now.

AnaSpec is pleased to introduce the industry's first commercially available assay kits for the detection of WNV protease NS3 inhibitors – the **SensoLyte™ series of WNV Protease Assay Kits**.

West Nile virus (WNV), from the family Flaviviridae,¹ was first identified in the West Nile district of Uganda in 1937.² WNV outbreaks have been reported in Israel in the 50's, France in the 60's and South Africa in the 70's.³ In 1999, the first documented WNV infection in the US was reported in New York.⁴ The main route of human infection is through infected mosquito bites. WNV infection can cause severe neurological disease and fatalities in both human and animal hosts.

SensoLyte™ WNV Protease Assay Kits:

- Industry's First & Only
- Fluorogenic
- Sensitive
- Homogeneous
- Ideal for HTS of WNV Protease inhibitors
- Fast (as short as 30 minutes)



WNV contains a single-stranded, positive-sense RNA genome, which encodes three structural proteins (capsid (C), membrane (M), envelope (E)), and seven non-structural proteins (NS1, NS2A, NS2B, NS3, NS4A, NS4B, NS5).⁵ NS3 protease is essential (along with viral-encoded cofactor NS2B) for post-translational processing of a viral polypeptide precursor in infected host cells. This polypeptide provides the structural and functional viral proteins. Inhibition of its processing could represent a potential treatment for viral infections. With no effective vaccine or antiviral drug to protect against WNV infection,⁷ this protease represents a potentially key target for developing anti-WNV drugs.^{8,9}

SensoLyte™ West Nile Virus Protease Assay Kits provide a convenient, homogeneous assay for high throughput screening of West Nile Virus protease NS3 inhibitors. Utilizing a fluorogenic peptide ([SensoLyte™ 440 West Nile Virus Protease Assay Kit](#)) or a FRET peptide ([SensoLyte™ 570 West Nile Virus Protease Assay Kit](#)), these assays provide continuous quantification of protease activity.¹⁰ Upon NS3 protease cleavage, the fluorescence of AMC in the former and 5-TAMRA in the latter is recovered. Their fluorescence can be monitored at their characteristic emission wavelength.

SensoLyte™ West Nile Virus Protease Assay Kits:

[SensoLyte™ 440 West Nile Virus Protease Assay Kit](#) (Ex/Em=354/442 nm)

[SensoLyte™ 570 West Nile Virus Protease Assay Kit](#) (Ex/Em=540/575 nm)

Related Product:

[WNV NS3 Protease, recombinant](#)

3 Step Process (96-well format):

1. Prepare working solutions:
 - a) Fluorogenic substrate (Component A)
 - b) WNV protease (not provided)
 - c) WNV inhibitor (Component D)
 - d)
2. Set up enzymatic reaction (protease+ inhibitor, controls), 37C for 10 min.
3. Add diluted fluorogenic substrate, mix and start reading fluorescence signal (kinetic or end-point).

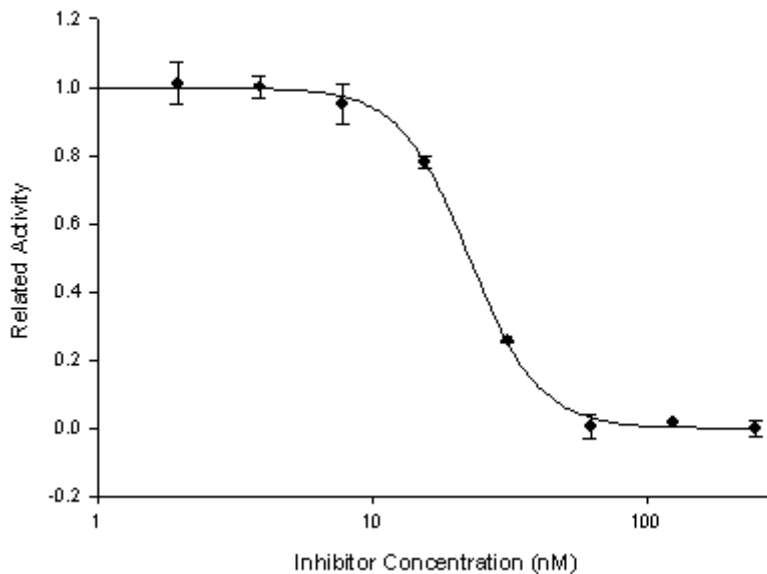


Figure 1. Inhibition of WNV by protease inhibitor, undeca-D-Arg-NH₂.

References

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