



The last few months have seen outbreaks of various flavivirus-caused endemics, most notably Dengue fever, in Honduras, Nicaragua, Singapore and other countries.

The infections affect hundreds of millions throughout the world each year, mostly in tropical countries, and fatality rates can reach 20 per cent (in the case of Dengue fever) if appropriate medical treatment is not available. Going after the vectors who host the virus (mosquitos, ticks, and the like) is essential to prevent *de novo* infections but **research into efficient diagnostic and therapeutic tools** is just as important.

And this is where PepID has already proven its worth in **answering biologically relevant research questions**, in this case for the West Nile virus. (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0066507>)

Peptide epitopes and molecular biology research

Peptide epitopes (alone or in combination) need to show enough discriminatory power to allow telling infections with closely related strains or viruses apart (biological signatures). Identification of such epitopes is the basis for diagnostic and, ideally, therapeutic applications, e.g. protective epitope-based vaccines.

In this case, a method for:

- a. discriminating between viruses/strains, and
- b. detecting conserved, yet still immunogenic or diagnostically relevant epitopes that cover different strains, would benefit research efforts.

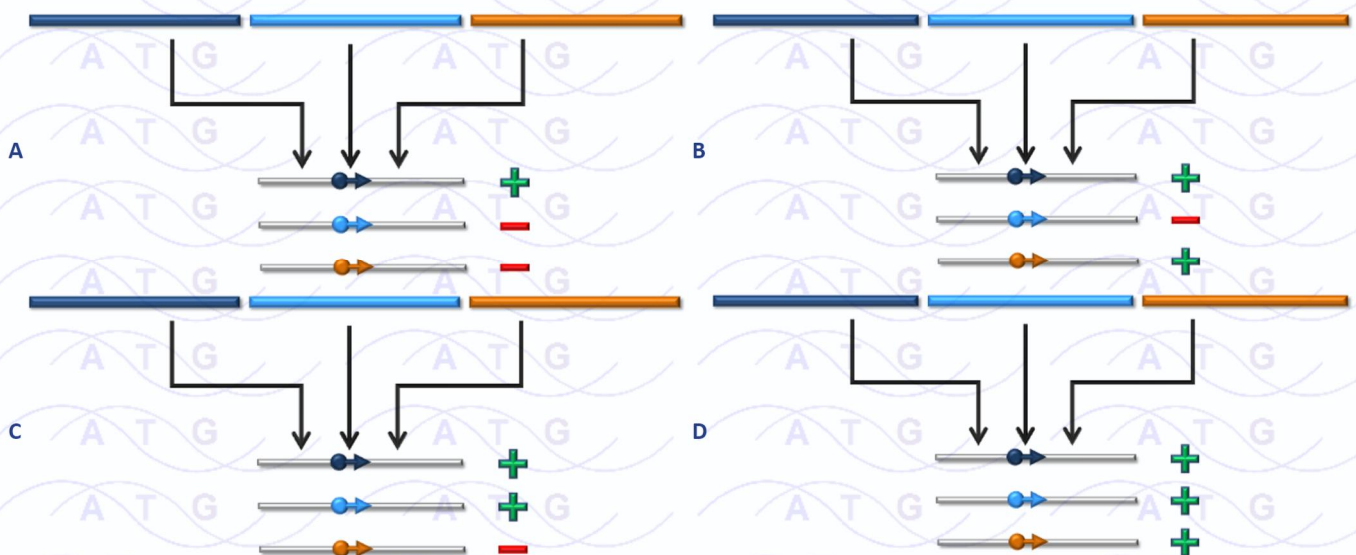


Figure 1: Discriminating power of PepID-hosted peptides derived from a biologically relevant target protein (dark blue), a protein from a closely related pathogen (light blue), and an unrelated or innocuous/irrelevant protein with an identical amino acid make-up for this specific peptide (to test for cross-reactivity). **A)** the selected peptide shows discriminatory relevance as it leads to a reaction while no such reaction is observed from the related and the control protein-peptide **B)** undesired cross-reactivity against the control protein **C)** While the peptide is diagnostic for the pathogens, it also cross-reacts with the control which could be detrimental when using an antibody directed against it. **D)** This peptide is not useful for diagnosis as it is non-selective

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