

## Detection of virulent Newcastle disease virus using a phage-capturing dot blot assay

### ABSTRACT

Newcastle disease virus (NDV) strains can be classified as virulent or avirulent based upon the severity of the disease. Differentiation of the virus into virulent and avirulent is necessary for effective control of the disease. Biopanning experiments were performed using a disulfide constrained phage displayed heptapeptide library against three pathotypes of NDV strains: velogenic (highly virulent), mesogenic (moderately virulent) and lentogenic (avirulent). A phage clone bearing the peptide sequence SWGEYDM capable of distinguishing virulent from avirulent NDV strains was isolated. This phage clone was employed as a diagnostic reagent in a dot blot assay and it successfully detected only virulent NDV strains.

**Keyword:** Filamentous phage, Dot blot, NDV, Pathotypes, Phage display