TECHNOLOGY

A Battery of Monoclonal Antibodies for the Differentiation of Newcastle Disease Virus

OVERVIEW

Newcastle Disease Virus (NDV) strains differ in pathogenicity and produce a wide continuum of clinical diseases in chickens ranging from mild respiratory distress to death. Isolates of NDV are currently classified according to virulence manifested in susceptible poultry: lentogenic (mild), mesogenic (modest), and velogenic (highly virulent). The last outbreak of velogenic strain of NDV in the United States resulted in the destruction of 12 million birds in Southern California.

While surveillance for highly virulent NDV has been maintained for all imported poultry and pets, it has been hindered by the inability of conventional diagnostic tests to rapidly differentiate highly pathogenic strains of NDV from milder ones.

Researchers at the University of Maryland, College of Veterinary Medicine have produced a number of monoclonal antibodies which can be used as a panel to rapidly differentiate virulent and avirulent strains of NDV. One of these antibodies designated AVS-1 is capable of detecting antigenic differences between vaccine and field strains of NDV. Another three monoclonal antibodies can also differentiate these strains. In addition, three monoclonal antibodies have been shown to neutralize NDV strains and five monoclonal antibodies are specific for the pigeon isolate of NDV.

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

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EXTERNAL RESOURCES

02-87-030