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Abbrevitions

Appreviation	Details
AGPT	Agar gel precipitation test
bp	Base pair
C terminus	Terminal region of IBV genome
CAM	Chorioallantoic membrane
Cat. No.	Catalog number
cDNA	Complementary Deoxynuclic acid
CE	Chicken Embryo
CELO virus	Chicken Embryo Lethal Orphan
CK cells	Chicken kidney cells
Ck2	Primer for PCR
CK4	Primer for PCR and sequencing
CTL	Cytotoxic T lymphocytes
DEPC-water	diethylpyrocarbonate -treated water
DOC	Direct organ culture
E	The envelope (E) protein of IBV
ECE	Embryonating chicken egg
GPC	General poultry company
HA	Heamagglutination
HI	Haemagglutination inhibition test
HVR	Hyper variable region
IBD	Infectious Bursal Disease
IBV	Infectious bronchitis virus
Ig	Immunoglobulin
IgA	Immunoglobulin A
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IHC	Immunohistochemistry
M protein	the membrane glycoprotein of IBV
MASP	Mannan-binding lectin-associated serine proteases
MBL	Mannan-binding lectin
MG	Mycoplasma gallisepticum

Appreviation	*Details*
MHV	Mouse Hepatitis virus
Min.	minute
mRNA	Messenger RNA
N protein	Nucleocapsid phosphoprotein of IBV
NCBI	National center for biotechnology information
ND	Newcastel disease
ng	Nano gram
NI	Neutralization Index
NIBV	Nephropathogenic IBV
NK	Natural killer cells
nm	Nanometer
Nt	Nucleotide
OC	Organ culture
PCR	Polymerase Chain Reaction
PHA	Passive Haemagglutination test
PI	Postinoculation
RFLP	Restricted fragment length polymorphism
RNP	Ribonuleoprotein
RT-PCR	Reverse transcriptase polymerase chain reaction
S protein	spike glycoprotein of IBV
S-1	First part of S1 region of the spike protein gene of IBV genome
S-2	Second part of S1 region of the spike protein gene of IBV genome
Sec.	seconds
T7	Primer for sequencing
TGEV	Transmissible Gastroenteritis Virus
TOC	Tracheal organ culture
UV	Ultraviolet
VLPs	virus-like particles
VN	virus-neutraliztion

Summary

In a trial to investigate the recent situation of infectious bronchitis virus in Egypt , fourty five samples were collected from different age flocks, suffered from severe respiratory and/or renal signs in broilers. In addition, to layer farms suffering from drop in egg quality and quantity as well as samples from broiler farms exhibiting proventriculitis were collected. Samples were subjected to clinical and postmortem examination and for virus inoculation in embrionated chicken eggs.

Allantoic fluid from each passage was subjected for testing using PCR test using primers CK4 and CK2 . Three samples showed positive in PCR test. The positive samples were subjected directly for sequencing procedure using Direct Automated Cycle Sequencing (DACS) method. The sequencing revealed three distinct isolates. The Gene Bank data base confirmed that the three isolates were not identical completely to any other previously isolated IB isolates either from Egypt or world wide. First isolate was designated Egypt/ ZAG/ 07/01 which have the gene bank accession number EU368592; EU368593 for isolate EGYPT/ZAG/07/02, and EU368594 for isolate EGYPT /ZAG/07/03.

The comparison between data obtained from gene bank data base with the Egyptian isolates showed that: the isolate EGYPT/ZAG/07/01 sequence has great identity to the Egyptian isolate (Egypt/Beni-Seuf/01), and the Israeli isolates (Israel/720/99 and IS/885) reaching 97%, 96%, and 95% respectively. Meanwhile

there is no any other isolate all over the world reaching this degree of identity. The nearest isolate were isolate JS/95/03 from china and IBV Isolate Ind-114-03 from India that reach only84% identity.

Also, the second recorded isolate (Egypt/ ZAG/07/02), showed high identity to seven Israeli isolates, Mass type vaccine and the Egyptian isolate (Egypt/Fa/03) with identity of 99%, 98% and 96% respectively. It also had great identity percent with south east isolates from China, Singapore, India and Korea which ranged from 96% to 98 % . But the most surprising is its relation to some European and American isolates which reached from 97% to 98% identity, and one isolate from Canada. From those data we found no geographical restriction in the distribution of those isolates and their related isolates but the great homology with Israeli isolates still present.

Meanwhile, the third recorded isolate Egypt/ZAG/07/03, showed great identity percent with variant strains from Taiwan and USA it has great identity percent with vaccinal strain Connecticut (96%) that used in Egypt in combination with Mass strain as combined bivalent live vaccine against IBV. Also it has 91% identity with Mass type strain.

Finally this work may offer an explanation for the emergence of new viral strains in the field. But while vaccination with live vaccine was the major tool for protection for the disease, the lack of knowledge of the interactions that occur between different populations of IBV in the field is a major handicap for the poultry industry.