



## Exogenous ALV-A induced liver lymphoma surface proteome as diagnostic biomarkers for AL/SV infections/group of diseases in poultry

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### Abstract:

Avian Leukosis/Sarcoma Virus (AL/SV), classified as genus Alpharetrovirus under subfamily Orthoretrovirinae and family Retroviridae with Avian Leukosis Virus (ALV) as type species, constitute Leukosis/Sarcoma (L/S) group of diseases/ infections in field flocks. One of the most harmful diseases, L/S group of diseases cause enormous and significant economic losses to global poultry industry due to various neoplastic/non-neoplastic conditions, morbidity and subclinical production losses, besides public health concerns through genome integration, infected chicken origin food products, live virus vaccines and newer virus emergence. AL/SV infection is diagnosed by detection of specific proteins/glycoproteins, which are encoded by gag, pol, env genes. Detection of major gsAg/p27 by sandwich Enzyme Linked Immunosorbent Assay (ELISA) or antibodies to p27 by indirect ELISA is the most common biologic/serologic assay currently in-vogue worldwide for diagnosis of AL/SV infections/group of diseases. As p27 is shared among all subgroups falling under exogenous (infectious) and endogenous (majorly noninfectious

sequences) viruses, these assays fail to differentiate among different subgroups. Hence, alternate biomarkers need to be worked upon for convenient, precise and early diagnosis of AL/SV infections/group of diseases in poultry flocks. Surface proteomes were prepared from exogenous ALV-A induced liver lymphoma in three dead chickens, as compared Marek's Disease Virus (MDV) induced liver lymphoma in one dead chicken and apparently normal liver tissue from freshly slaughtered chicken. Protein profile resolved in 12% resolving gel in nondenaturing/ native Polyacrylamide Gel Electrophoresis (native-PAGE) revealed 6-9 bands in ALV-A induced liver lymphoma, as compared six bands in MDV induced liver lymphoma and 10 bands in apparently normal liver tissue surface proteomes. Polypeptide profile resolved in 15% resolving gel in denaturing/Sodium Dodecyl Sulfate (SDS)-PAGE revealed 19 bands (Mean $\pm$ SE 10.68 $\pm$ 0.0-113.85 $\pm$ 0.16 kDa) as compared to 11 bands (15.07.60-126.08 kDa) in MDV induced liver lymphoma and 17 bands (10.96-121.75 kDa) in apparently normal liver tissue surface proteomes. Expression or loss of polypeptides from ALV-A induced liver lymphoma and MDV induced liver lymphoma surface proteomes are under exploration as future biomarkers for diagnosis of AL/SV infection/group of diseases in chickens.

### Biography:

Alka Tomar has completed PhD from ICAR-IVRI, Izatnagar and BSc (1978) from Lucknow University and Postdoctoral training at ICGEB, New Delhi, India. She has established Tumor Immunology Laboratory (1996) and published more than 25 research papers in reputed journals