CA125 Expression in Spontaneous Ovarian Adenocarcinomas from Laying Hens
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Introduction
Ovarian cancer is the most lethal of all gynecological disease, and it ranks forth in cancer deaths among women [1,2]. The reason behind the alarmingly high mortality rate from ovarian cancer is late diagnosis of the disease after metastasis has occurred. One factor hindering significant advancement in the study of ovarian cancer is the lack of a fully characterized model system. The majority of the mouse based animal models have genetically induced tumors that are inappropriate for large scale chemoprevention studies. However, the domestic hen [Gallus domesticus] may be a useful model because hens maintained under intensive egg-laying conditions will produce 280 or more eggs in 50 weeks and spontaneously develop ovarian adenocarcinomas [3,4]. Egg production mimics the incessant ovulation theory of ovarian cancer formation in that the risk of developing ovarian cancer is directly related to the number of ovulations a woman experiences in her lifetime. CA125 is a cancer antigen that is used in helping to diagnose ovarian cancer.

Objective
The objective of this study was to determine the presence of CA125 in avian ovarian tumors and cells isolated from the tumors.

Materials and Methods

Tissue Collection
•Single Comb White Leghorns
•Ovarian adenocarcinomas were aseptically removed and cut into several pieces for immunohistochemistry or cell culture.

Cell Culture
•Tissue mechanically and enzymatically digested
•Maintained in DMEM, 1% Gentamicin, 1% non-essential amino acids, 10% FBS

Immunocytochemistry and Immunohistochemistry
•4% paraformaldehyde fixation and PI staining
•Boiling .01M citrate buffer at pH 6.0
•Anti-CA125 overnight at 4C
•Fluorescein-conjugated goat anti mouse IgG for 2 hours

Results
Growth Data
The growth curves fit a typical sigmoidal curve for cell growth suggesting a cell cycle time of 28 hours (fig.1).

Western Blot
•BCA assay
•8% resolving gel, 4% stacking gel
•Western blot: anti-CA125 overnight 4 C, goat anti-mouse IgG-HRP conjugate for 2 hours

Immunocytochemistry
90% of cultured cells stained positive for CA125

Immunohistochemistry
All ovarian tumors stained positive for CA125 (Fig. 4).

Conclusion
It appears that CA125 expression is a hallmark of avian as well as human ovarian tumors.

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References

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