Short Communication

Atopic Dermatitis, a Package with Thousands Surprises

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INTRODUCTION

The biological activity of PEDF, (molecular weight ~45 kDa) includes the modulation of the activity of Vascular Endothelial Growth Factor (VEGF). The expression of PEDF and VEGF within both the retina and RPE is relevant to this study [1,2-9]. Any immunologic inhibition of the influence of PEDF over VEGF might result in a loss of control over the activity of VEGF. Without this restraint VEGF could overact leading to the excessive blood vessel propagations typical of several ocular diseases that involve uncontrolled vascular proliferation [10].

MATERIALS AND METHODS

The antibody activity of the ovarian cancer patient was evaluated by Western blot analyses on blots of pig retina, and in vitro cultivated human RPE (ATCC ARPE-19 CRL-2302), as previously described [11]. In each case the patient’s antibody activity was evaluated at a dilution of 1:200. Additional immunological inquiry was performed on sectioned rhesus monkey eye by IFA, and mono layers of in vitro cultivated RPE, at a dilution of 1:20. Results were visualized using FITC labeled rabbit anti-human gamma globulins (Sigma product F 4637) at a dilution of 1:80.

A preparative 10% Poly-Acrylamide Gel Electrophoresis (PAGE) of an extract of RPE was stained with Coomassi brilliant blue, and the 45 kDa band excised and subjected to proteomic analysis.

CONCLUSIONS

Findings derived from this study implicate PEDF as the 45 kDa antigen described here and in previous descriptions of the 45 kDa CAR syndrome [1,10]. This protein has extensive influence in maintaining homeostasis, any antibody mediated interference with its activity could prove to have far reaching effects, and could optimize the molecule for immunologic removal by phagocytosis.

The extensive anatomical distribution of PEDF might result in it being involved in other autoimmune reactions if a loss of tolerance develops as a result of uncharacteristic expression. It is known to be involved in the neuronal differentiation of retinoblastoma cells, and is over expressed in other cancer cells such as Junket T-leukemia lymphocytes, and HeLa cells. The common immunologic response to PEDF in the 45 kDa CAR syndrome might therefore result from the patient’s neoplasm expressing this factor in excess, inciting the observed immunological response, comparable to that described in the aberrant expression of ‘recoverin’ in small cell carcinoma associated CAR [1]. If this proves to be the case, it would contribute to our understanding of how some cancers derive the nutrition required for both growth and metastasis. The recruitment of nurturing blood vessels could result from the inadvertent blocking of the modulating activity of PEDF. Specific neutralizing antibodies developing from the excessive production of this ubiquitous protein [13-16].

The possibility of an antibody-mediated interference in the biological activity of PEDF leads to a testable hypothesis: “Immunologic inhibition of the modulating anti-vascular proliferation properties of pigment epithelium-derived factor results in a loss of homeostasis leading to the excessive production of blood vessels that typifies some forms of cancer, and retinopathies that involve uncontrolled vascular proliferations”. If this hypothesis proves correct it will introduce the prospect of ameliorating the pathological process of unwanted vascular spread through the infusion of specific bioactive PEDF peptides [17], and/or appropriate targeted immune modulation therapy [18].


Table 1: Properties of Soy-proteins-based Formulas.

<table>
<thead>
<tr>
<th>Property</th>
<th>Casein Highly</th>
<th>Casein Partially</th>
<th>Whey Highly</th>
<th>Whey Partially</th>
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</thead>
<tbody>
<tr>
<td>No minute amount of cow milk proteins.</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>No cross reactivity with cow milk protein.</td>
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<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Lower immunogenicity (IgE Abs) than cow milk proteins.</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Lower allergenicity than cow milk proteins.</td>
<td>-</td>
<td>-</td>
<td>+</td>
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</tr>
<tr>
<td>Similar antigenicity (IgG Abs) to cow milk proteins.</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Nutritional adequacy similar to cow milk formulas.</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Better palatability than highly Hydolysate Formulas.</td>
<td>-</td>
<td>-</td>
<td>+</td>
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<td>Less expensive than highly Hydolysate Formulas.</td>
<td>-</td>
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REFERENCES


