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The Effects of Purified Fractions from the Hyperimmune Egg HPC2 on Production of Immunobiologically Relevant Molecules by Squamous Cell Carcinoma †

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Abstract: Our aim was to evaluate the effects of isolated and/or purified protein fractions from the hyperimmune egg HPC2, on squamous cell carcinoma, by quantifying the immunobiologically relevant interleukins-cytokines-chemokines. CAL27 (ATCC, CRL-2095), epithelial cells from squamous cell carcinoma were incubated for 24 / 48 hours, in the presence of IgY (standard or purified product from ROMVAC), or isolated and purified protein fractions (F1-F4), from the hyperimmune egg HPC2. xMAP analysis (Luminex200 platform) evaluated the 38-plex molecules: cytokines, chemokines, growth factors release after cell treatment; these molecules confirm modulation in proximal events of inflammation and immune response. A statistically significant decrease in expression was observed for GM-CSF, GRO/CXCL1, IL-6, IL-8, TNFα, VEGF, MCP1/CCL2, IL10/CXCL10, and IL-4, at 24 and 48 hours, respectively, after treatment with different protein fractions isolated from the hyperimmune egg, compared to control. Moreover, for the fractions in which the decrease of the molecules abovementioned was statistically significant, the analysis of the correlations between the molecules was followed. Thus, very strong correlations (0.9-1) (Pearson) were observed, at 24 and 48 hours between the following molecules GM-CSF, VEGF, MCP-1/CCL2, IL-6, TNFα, GRO/CXCL1, IL-10/CXCL10, IL-8, IP-10, IL-1a, and IL-Our data showed the following relevant molecules based on statistical significance and correlations between treated and control groups: GM-CSF, GRO/CXCL1, IL-6, IL-8, TNF, and VEGF, showing the *in vitro* anti-inflammatory effects of fractions on squamous cell carcinoma.

Keywords: squamous cell carcinoma; interleukins-cytokines-chemokines; hyperimmune egg fractions.

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Conflicts of Interest

The authors declare no conflict of interest.