

Immunodominant role of CCHA subunit of Concholepas hemocyanin is associated with unique biochemical properties

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Hemocyanin, the oxygen transporter metallo-glycoprotein from mollusks, shows strong relationship between its notable structural features and intrinsic immunomodulatory effects. Here we investigated the individual contribution of CCHA and CCHB subunits from Concholepas hemocyanin (CCH) to in vivo humoral immune response and their pre-clinical evaluation as immunotherapeutic agent in a mice bladder cancer model, in relation to their biochemical properties. To this end, subunits were purified and well characterized. Homogeneous subunits were obtained by anionic exchange chromatography, and its purity assessed by electrophoretic and immunochemical methods. While each CCH subunit contains eight functional units showing partial cross reaction, the vibrational spectral analysis showed several spectral differences, suggesting structural differences between them. In addition, we demonstrated differences in the carbohydrate content: CCHA had a 3.6% w/w

sugar with both N- and O-linked moieties. I