

CHEMICAL COMPOSITION STUDY OF STANDARD CHICKEN SERUM

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Abstract. Sterile filtered chicken serum was purchased from “Sigma-Aldrich” and studied using X-ray photoelectron spectroscopy in order to reveal chemical composition and distribution of the predominant elements. The main peaks observed in survey spectra were of C 1s (76.94 %), N 1s (3.73 %) and O 1s (13.47 %) core levels. There have also been observed small amounts of P 2p (0.96 %), Cl 2p (1.79 %), and Na 1s (3.11 %). The study revealed that carbon spectrum contains four components with the corresponding chemical bonds: C–C, C–N/C–OH, C=N/N–C=C, and C=O. Nitrogen ions were present in three forms: imine, amine and positively charged nitrogen. Oxygen ions were bonded with carbon and nitrogen, and were connected with water molecules. The obtained spectroscopic data contains considerable variety of elements and is similar in part to the bovine serum albumin fraction V and human albumin.

Keywords: chicken serum, chemical composition, spectroscopy