

Use of BCL2 Monoclonal Antibodies to Prove the Prooncogenic and Nephrotoxic Action of Ochratoxine a in Broiler Chickens

Carmen SOLCAN, Gh. SOLCAN, S. MOROSAN, O. Z. OPREAN

University of Agricultural Sciences and Veterinary Medicine Iasi, 8, M. Sadoveanu Alley, Email
carmensolcan@yahoo.com

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SUMMARY

BCL2 antiapoptotic proteins plays a central role in preserving mitochondrial structure and function, preventing the occurrence of transition permeability and inhibiting mitochondrial cytochrome C release in cytosol.

The goal of this study was to evaluate the nephrotoxic and prooncogenic effect of OTA in broiler chickens experimentally intoxicated, using BCL2 antibodies. Experiment were used 40 Ross 307 broilers six days old, divided into 2 groups: experimental (E) and control (C), kept in the same environmental condition. E group received daily by gavage ochratoxin A (OTA-Sigma Chemicals Co.) eluted in sterilized sunflower oil, at a dose of 50.62 mcg / kg bw and the control group received only eluent (sterilized sunflower oil), for 20 days. At the end of each week during the experiment, five chicks were selected by random from each group and killed. Histopathology was performed on kidney fragments, embedded in paraffin, and stained by HEA method. Immunohistochemistry (IHC) were performed with anti BCL2 and DAB Substrate Kit (BD Biosciences Pharmigen). Electronmicroscopic investigations were carried out with electron microscope TESLA BS 500.

In two of the five chicks exposed to OTA for 20 days BCL2 positive cells were identified, ordered in layers into the renal papilla, fact considered a presumably indicator of epithelial cell tumors with transitional cells of the upper urinary tract. The incidence of these urothelial tumors of renal pelvis and urethra is higher in people in endemic areas for ochratoxicosis (Vutelic and Sostaric1991). BCL2 positive cells were found in both proximal and distal convoluted tubules, both detached from the basal membrane but also by neighboring cells, or placed in the lumen of its layered. Some positive BCL2 cells have high nucleus, sometimes two nuclei, rich in euchromatine. BCL2 proteins are known as prooncogenic, regulating the apoptosis. BCL2 overexpression play a role in tumorigenesis and may explain the relative resistance of renal cell carcinoma to chemotherapeutic agents and radiation therapy.

Ultrastructurally, in the kidney, the presence of abnormal forms of mitochondria were noted. These are numerous, large, oval shapes, spherical granules of different sizes electronodense other degenerate, characterized by small cristae reduced number of spaces in the downtown area.

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