Caracterization of cancer markers induced by 1,2-dimetil-hidrazine associated to the Bowman-Birk proteases inhibitors (BBI) and proteasome anti-carcinogenical activity.

Carli, P.A [1]. Torres, F[1]., Sá, M.H.G[1]., Aguilar, N[1]., Franco, M[1]., Guerra, R[1]., Cardoso, C [2]

[1]Departamento de Bioquímica, NUPEB, Universidade Federal de Ouro Preto, Minas Gerais, Brasil. [2]Departamento de Patologia, NUPEB, Universidade Federal de Ouro Preto, Minas Gerais, Brasil.

Studies proves that Bowman-Birk proteases inhibitors (BBI) prevent the cancer induced by 1,2-dimetil-hidrazina (DMH). DMH is a potent cancer inducer that shows precociously in the colon and intestine. The present work has as objective the establishment of an experimental model of cancer induced with DMH, what will allow the search of molecular markers of that disease. They were weekly administered 30 mg/Kg of DMH by the intraperitoneal way in mice of 90 days of age along 10 to 16 weeks. The largest frequency of alterations was observed around to 16th week, and 90% of the treated animals presented lesions. Of the found lesions, 20 were in the colon, and 11 were located in the proximal colon, 3 in the distal colon and 6 in the anal area. The animals of the groups control and test of that experiment were killed to preparation of histopatological slices and smashing of several organs. The extracts were, after the extraction of proteins of subcelular fractions, studied of the interaction capacity with BBI and increase of the proteoliytic activity in specific fluorescent substrat. The extracts of the lisossomal fractions of the colon and Intestine showed significant increase of the proteolytic activity in graph of residues with the time of treatment. Besides, proteins retained in BBI affinity column they increased in the treated animals with DMH. The eletroforesis presented possible precocious markers of that cancer that were studied through proteomical studies and mass espectrometry.

Acknowledgement: UFOP, FUNEC, FEOP, PET