

P032 Scaled-down purification of 20S proteasome from human tissue sample: application on normal and tumor colorectal cells

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The proteasome, that constitutes the main pathway for degradation of intracellular proteins in eukaryotic cells, regulates many physiological processes and its dysfunction can lead to tumorigenesis. The proteasome also represents a novel drug target as its inhibition can induce apoptosis in tumor cells. In this study, we compared for the first time the subunit composition and activity profiles of 20S proteasome from healthy and cancerous human colorectal cells. The immuno-purification of 20S proteasome has been adapted to the analysis of low amount of cells by using magnetic beads. This scaled-down protocol allowed the purification of 20S proteasome from adjacent normal and tumor colorectal cells of several patients. Proteomic approach based on 2-DE showed that the 20S proteasome subunit composition from normal and tumor cells was similar. The proteasome activity of the corresponding samples was equivalent or increased in tumor colorectal cells compared to the normal ones. This proteomic approach represents a valuable tool for the structural and functional study of 20S proteasome from human tissue samples in order to further understand the involvement of proteasome in cancer.