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European Journal of Histochemistry
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The *European Journal of Histochemistry* was founded in 1954 by Maffo Vialli and published until 1979 under the title of *Rivista di Istochimica Normale e Patologica*, from 1980 to 1990 as *Basic and Applied Histochemistry* and in 1991 as *European Journal of Basic and Applied Histochemistry*. It is published under the auspices of the University of Pavia, Italy.
The *European Journal of Histochemistry* is the official organ of the Italian Society of Histochemistry and a member of the journal subcommittee of the International Federation of Societies for Histochemistry and Cytochemistry (IFSHC).

The Journal publishes Original Papers, Technical Reports, Reviews, Brief Reports, Letters to the Editor, Book Reviews, Views and Comments, concerning investigations performed with the aid of biophysical, biochemical, molecular-biological, enzymatic, immunohistochemical, cytometric, and image analysis techniques.
Areas of particular interest to the *European Journal of Histochemistry* include:
- functional cell and tissue biology in animals and plants;
- cell differentiation and death;
- cell-cell interaction and molecular trafficking;
- biology of cell development and senescence;
- nerve and muscle cell biology;
- cellular basis of diseases.

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morphological changes consistent with apoptotic features and extensive proteomic modulation . The most important effects were obtained by aerobically biosynthesized AgNPs-EPS treatment, due to the major release of Ag^{+1}, as verified by voltammetry analysis. Proteomic analysis showed modulation of several proteins related to oxidative stress and apoptotic and mitochondrial pathways. Taken together, these results provide new important elements in support of the potential antitumoral activity of AgNPs-EPS.

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COMPARATIVE PROFILING BY PROTEOMICS AND ZYMOGRAPHIC ACTIVITIES OF TUMORAL AND NON-TUMORAL CELL LINES

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The extracellular matrix (ECM) underlying epithelial tissues is involved in the maintenance of cell polarity and homeostasis. ECM is a dynamic structure under the regulated remodeling of its components. The major enzymes responsible of matrix degradation are the matrix metalloproteinases (MMPs), a well known family of zinc-dependent endopeptidases. Much attention has been focused on MMP-2 and MMP-9 because of their ability to degrade type IV collagen, a major constituent of basement membranes.
A deregulated proteolysis of ECM molecules may cause the alteration of cell polarity and may contribute to the disruption of cell–cell and cell–ECM adhesions, promoting cancer progression. These alterations are responsible for a poor prognosis, and a positive correlation between the increase of MMPs and the degree of malignancy has also been observed FOR many tumor histotypes. To approach these issues on in vitro models, we performed a comparative study, between a couple of tumoral and non-tumoral mammary cell lines and a couple of thyroid cell lines derived respectively from a benign and malignant cancer.
This experimental approach, based on scanning electron microscopy, on proteomic analysis and on gelatin zimography, highlighted a similar profiling of the two differential couples of cell lines: that is between malignant and non-malignant cells respectively, regardless of their histological origin.
In particular, it was observed that the cell lines derived from aggressive cancers, when compared with their non-malignant counterpart, showed an increased secretion of MMPs, a cell shape highly pleomorphic and a higher expression of protein clusters potentially associated with invasion and metastasis. The analysis of the interactions between the expression of MMPs and of selected proteomic clusters have offered important indication on the complex network existing between neoplastic cells and their environment.
The work was co-funded by the Italian 5x1000 to COBS.

IDENTIFICATION OF DIFFERENTIALLY EXPRESSED PROTEINS IN ATHEROSCLEROTIC PATIENTS WITH TYPE 2 DIABETES

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Atherosclerosis is a form of chronic inflammation characterized by the accumulation of lipids and fibrous elements in medium and large arteries that represents a major cause of death and disability in people with diabetes.
The aim of this study is to identify differentially expressed plasma proteins between patients with or without type 2 diabetes undergoing carotid endarterectomy, by applying two-dimensional electrophoresis analysis coupled with mass spectrometry.
Briefly, 14 plasma samples from diabetic patients and 15 plasma samples from non-diabetic patients were subjected to a low-abundance proteins enrichment step using hexapeptide combinatorial ligand libraries (ProteoMiner™ enrichment kit, Bio-Rad Laboratories) followed by two-dimensional electrophoresis. This analytical technique allows resolving hundreds of different protein isoforms according to both isoelectric point and molecular weight. Protein profiles were compared by using PD-Quest software (Bio-Rad Laboratories) and spots of interest were identified by matrix-assisted laser desorption ionization-time of flight (MALDI-TOF) mass spectrometry (MS). Differential analysis was validated by 1D- and 2D-western blotting. An interaction map was made using String 10 (http://string-db.org/).
A panel of proteins differentially expressed between the two groups of atherosclerotic patients have been identified. Among them, there are fibrinogen beta and gamma chains, complement c1r, c3 and c4-B subcomponents, alpha-1-antitrypsin, vitronectin and some apolipoproteins. Preliminary results on predicted protein-protein interactions suggest that vitronectin could play a role in modulating fibrinolysis, complement dependent immune responses and other pathways in diabetes. Actually, identification of markers in diabetic patients could be of interest for clarifying the biochemical mechanisms underlying the strong association between diabetes and atherosclerosis.
This work was supported by Regione Autonoma della Sardegna (Legge Regionale 7 Agosto 2007, N.7 – Bando 2010 - Grant no. CRP-26789 and P.O.R. Sardegna F.S.E. 2007/2013, Asse IV Capitale Umano - Obiettivo competitività regionale e occupazione, Asse IV Capitale umano, Linea di Attività l.3.1) and by Fondazione Banco di Sardegna.

EXTRACELLULAR VESICLES SHED BY A375 MELANOMA CELLS, CONTAIN H1° RNA AND RNA-BINDING PROTEINS

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Extracellular vesicles (EVs) are shed in the extracellular environment by both prokaryotes and eukaryotes. Although pro-