



Postgenomic histochemistry

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In my editorial covering the year 2001, I drew attention to «*the torreny of information pouring out of the multiorganizational genome sequence projects into the field of active biological research*». On that occasion I also expressed the opinion that this enormous quantity of data coming from genomics and proteomics had to be elaborated by resorting even to new models of cell activity, as for instance, models based on the role of transcripts.

The data from this postgenomic biology have to be compared, however, with the qualitative and quantitative data emerging today from the histochemical literature obtained from a variety of models and from the complexity of integrated morphological, submorphological, enzymo- or immunohistochemical *in situ* biological approaches which are the mainstays of the important refluorishing of the *new histochemistry* that our Journal has always supported. The objectives of this science are the molecular foundations of the function of the cell organelles, the coordinations among the different organelle activities in a cell, the rhythm of life of different cell populations and their correlation with different tissutal and extratissutal specialisations in humans, mammals, vertebrates, invertebrates and plants and finally bacteria and viruses during development under normal and pathological conditions (see Manfredi Romanini, 2002).

This first issue of 2003 has, therefore, to be read as a playout of these interests.

The first two papers of this issue are concerned with the recent molecular approaches in which changes in some structures (for instance, the cell membrane) may be interpreted as signals of specific pathogenesis. This is proved in the minireview by Maraldi *et al.*, and in the following paper by Meola *et al.*, both authors being interested in the molecular modifications of cell membranes in muscle pathologies: i.e. the nuclear envelopathies of Emery-Dreifuss muscular dystrophy and the hereditary skeletal muscle channelopathies, respectively

In the third paper, Royuela *et al.* give us an impressive series of data about the dystrophin-

associated proteins in muscle cells and sciatic nerves (here the animal model is the cynomolgus monkey).

Modern basic cytology and cytochemistry with computational elaborations of fluocytometric data, and immunohistochemical and ultramicroscopic approaches are utilized in the paper by Smetana *et al.* on the role of the nucleoli in apoptotic mechanisms, and in the one by Echeverria *et al.* on the process of the XY bodies formation in the testis of rats and Guinea pigs.

A very different direction is followed by Croce *et al.* They added low and high molecular weight hyaluronate to adult human fibroblasts in a monolayer and achieved significant inhibition of cell growth. This inhibition was dependent on the hyaluronan concentration and independent of its molecular weight. They suggested that the utilisation of hyaluronan contributed to the three-dimensional organisation and the hydration of the extra-cellular matrix, influencing the cell environment and becoming a powerful modulator of fibroblast metabolism and growth.

A study on the aging process at the cell, tissue and organ level is presented by Franchini *et al.* in a very interesting model: the renowned hermaphrodite worm *Caenorhabditis elegans*. Besides a complete classical histochemical picture of the cell changes during the aging process, they discuss the progressive disorganization of the components of the gonad and point out the decrease of neurons positive to anticytokine and antigrowth factors. From an integrated analysis of different approaches to the different worm cellular types in aging, appears the important role of the nervous system *as a central regulator of animal life span*.

Another very different model, in the plant kingdom, is suggested by Pasqua *et al.*, who describe the uptake of essential oils during root differentiation in *Angelica archangelica L.*, a herbaceous biennial plant used in folk medicine, but mainly cultivated nowadays for its roots rich in oils used in flavouring perfumes (the angelica aroma). The authors prove that only the large secondary secretory ducts in the

roots contain high concentration of α and β phellandrene, important factors for the oil's aroma. This study is interesting, too, from a technical point of view: it shows splendid sections of roots at different developmental stages and proposes original stains (i.e. the nadi reaction which stains terpenic compounds violet) for *in situ* localization of oils.

I would like to add some information about the new edition of the Journal.

While the scientific board has not changed, Giovanni Meola will take the place of the late Guglielmo Scarlato on the Editorial Board, and Guido Rindi and Tindaro Renda have also been invited to be consulting specialists for histopathology.

As we have already announced in the last issue 2002, the *European Journal of Histochemistry* will be published under the auspices of the Ferrata Storti Foundation, Pavia, and has a new publisher, the Tipografia PIME Editrice, Pavia, who has assured us of a strong support in the promotion and the development of the image of our Journal in its relations with the media at all levels; all efforts will be made to further shorten the time of revision and publication of the papers. Our website has been renewed too, with the hope that good use will be made of it.

We shall be much obliged of your standing by us in our efforts to improve the Journal. Both suggestions and criticisms will be well received.

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