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New biological treatment of HIV infection and AIDS-related diseases

AIDS-related illnesses are no longer the primary threat, but a new set of HIV-associated complications has emerged resulting in a novel chronic disease that for many HIV-infected people will span several decades of life. Deterioration of crucial homeostatic mechanisms in such disease invariably results in activation of inflammatory mediators, chronic inflammation, cellular aging, loss in immunological function, increased susceptibility to diseases, alteration of metabolism, decrease of energy production and neuro-cognitive decline. Owing the complexity of the systems involved in such disease, substantial limitation of current therapeutic approach persists. We propose here a treatment with stem cells differentiation stage factors taken from zebrafish embryos which are able to regulate in different, specific way the genes expression of normal and pathological stem cells. Exposure to early developmental stage of zebrafish embryo growth and differentiation factors may enhance stem cell expression of multipotency and activate both telomerase-dependent and -independent antagonists of cell senescence. Factors taken from late stages of cell differentiation can be used to control cell proliferation of tumor cells. All factor networks are able to prevent neuro-degeneration and other degenerative phenomena present in chronic diseases and to maintain the homeostasis of neuro-endocrine-immune- metabolic mechanisms disrupted by stress and other threatening situation. Our research aims to provide novel insight regarding the potential combination of epigenetic reprogramming mechanisms in controlling plasticity and pluripotencies of stem cells population and define stem cells differentiation factors capable in repairing different pathological stem cells which are at the origin of many chronic diseases.

Biography

Guido Norbiato has completed his MD at the age of 25 years from University of Studies in Milan-Italy. Postdoctoral studies, Specialty of Endocrinology and Metabolism, Qualification for University teaching, Assistant professor from the University of Studies of Milan. He moved to L. Sacco University Hospital of Milan where he became Chief of the Endocrinology and Metabolism unit and founded the Laboratory of endocrinology, after he became Director of the Department of Specialistic Diseases. He published more than 140 articles and publications in internationally referred journals regarding endocrinology, metabolism, and autonomic, immune, inflammatory, vascular systems. With impact factor 600, he edited two books on endocrinology and metabolism in HIV infection.

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