1. INTRODUCTION

The field of gene therapy represents one of the most challenging therapeutics for the next millennium. As such the concept might have been oversold ahead of time. Nevertheless, in some instances, potential clinical efficacy is currently showing in the picture with reports of significant successes in e.g., inherited severe combined immuno-deficiencies, haemophilia, arteritis obliterans and even cancer. Potential applications of gene therapy are extremely large extending from monogenic hereditary diseases to acquired and multifactorial disorders. Therapeutic gene transfer addressing such a large panel of conditions is currently being investigated, bringing up therapeutic options in diseases where none had been available to date. The development of recombinant DNA technology has induced in the public fears and speculation regarding its potential risks. In fact, the report of undue accidents in the United States has resulted in a broad debate on the subject of gene therapy oversight brought up to US Senate and government.
2. WHY IS THERE A NEED FOR REGULATION OF GENE THERAPY?

The implementation of gene therapy involves technological approaches which might not be devoid of potential side effects just as with many conventional therapeutic means addressing severe conditions\textsuperscript{12,13}. There are different levels where quality and safety need to be ascertained: the patient, the carers and the environment. Safety and regulatory aspects of gene therapy can be envisaged along three lines: 1st/ Experimental and preclinical research; 2nd/ Manufacture of gene therapy products; 3rd/ Clinical trials and development. The regulation of Gene Therapy is intended to assess for these risks in order to minimise them, and also delineate a margin where safety is most likely secured.

Appropriate evaluation of risk/benefit of gene therapy intervention is needed as this field adapts to evolving knowledge. There is no doubt that a significant complexity results from a number of critical levels of concern: gene discovery; gene regulation; gene delivery systems with potential biohazards; manufacture of biotechnology products and finally, efficacy and safety outcome following treatment of a patient. With respect to basic principles involved in the protection and respect of the human person submitted to biomedical research and clinical trials, gene therapy is no different from other fields of medicine. The main guarantee of patient well-being is sound knowledge, specific expertise and wise judgement in evaluating the risk/benefit ratio, rather than specific regulations.

3. REGULATION OF GENE THERAPY: CURRENT STATUS

3.1 Pre-clinical research

Regulation applying to preclinical research mainly relates to the use of Genetically Modified Organisms. In order to harmonise positions within EEC, three Directives were adopted by the Council: (1) \textit{Containment of genetically modified organisms (GMOs)} to protect workers and environment during the production process. This is governed by the application at the national level of the EC Directive (90/219/EC, DG XI; revised 98/81)\textsuperscript{14,15,16,17} on contained use of genetically modified microorganisms (2) \textit{The potential adverse consequences of the deliberate release of GMOs} (eg recombinant viruses) into the environment. This is also governed nationally by the application of the EC Directive (90/220/EC, DG XI; currently being