

Italian Association for Cancer Research

NETWORK OF MOLECULAR EPIDEMIOLOGY OF CANCER IN ITALY

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The overall goals of the Network are: (a) to create a network of researchers involved in the identification of relevant interactions between genes and the environment through studies of molecular epidemiology in Italy; (b) to rationalize and improve the quality of laboratory measurements by referring to reference laboratories; (c) to pool existing data sets; (d) to create a network web site. The contribution of the ISS will concentrate on functional assays for DNA repair proteins. Since DNA repair plays a major role in modulating genetic susceptibility to cancer, the search for single nucleotide polymorphisms (SNPs) in genes of several DNA repair pathways has become a world-wide effort. Only few studies, however, have addressed the issue of the functional consequences of these genetic changes. The ISS will develop functional assays to analyse the genotype/phenotype correlations of SNPs in DNA repair genes. Several experimental strategies will be investigated. Firstly DNA repair variants will be expressed in appropriate cell systems and their functionality tested by *in vitro* and/or *in vivo* DNA repair assays. Secondly, purified DNA repair mutant proteins will be biochemically characterized for their specific activity and assayed with the other partner proteins within the pathway in reconstituted DNA repair systems.