



TITOLO PROGETTO

ENPRA - RISK ASSESSMENT OF ENGINEERED NANOPARTICLES

Linea finanziamento: VII FP - Cooperation-NMP

Area Scientifico Disciplinare: 04_ Scienze della Terra

STRUTTURA (Dipartimento/Centro)

Dipartimento di Scienze Ambientali

DOCENTE RESPONSABILE SCIENTIFICO

MARCOMINI Antonio

DATI FINANZIARI

Costo Complessivo del Progetto	Finanziamento Complessivo Assegnato	Costo totale delle attività a Ca' Foscari	Assegnazione Complessiva a Ca' Foscari
5.128.993	3.700.000	377.699	286.025

INIZIO ATTIVITA' (previsione)

2009

FINE ATTIVITA' (previsione)

2012

ABSTRACT PROGETTO

Engineered Nanoparticles (ENP) are increasingly produced for use in a wide range of industrial and consumer products. Yet it is known that exposure to some types of particles can cause severe health effects. Therefore it is essential to ascertain whether exposure to ENP can lead to possible health risks for workers and consumers. We have formed a consortium of well-known scientists from European Universities and Research Institutes, with over 100 publications in the field of Nanotoxicology. Our aim is to develop an approach for the Risk Assessment of ENP (ENPRA). Our objectives are: (i) to obtain a bank of commercial ENP with contrasting physico-chemical characteristics and measure them; (ii) to investigate the toxic effects of ENP on 5 (pulmonary, hepatic, renal, cardiovascular and developmental) target systems and 5 endpoints (oxidative stress, inflammation; immuno-toxicity; fibrogenicity; genotoxicity) using in vitro animal/human models; (iii) to validate the in vitro findings with a small set of carefully chosen in vivo animal experiments; (iv) to construct mathematical models to extrapolate the exposure-dose-response relationship from in vitro to in vivo and to humans; (v) to use QSAR like models to identify the key ENP characteristics driving the adverse effects; (vi) to implement a risk assessment of ENP using the Weight-of-Evidence approach; (vii) to disseminate our findings to potential stakeholders. To harmonise the research activities between our EU group and the US, we have established links with scientists from US Universities (Duke, Rochester) and Government Agencies (NIH/NIEHS, NIOSH and EPA) with on-going research in Nanotoxicology. Our objectives here are (vii) to share information and agree on experimental protocols; (viii) to avoid duplication of work; (ix) to further validate the findings of this proposed study.