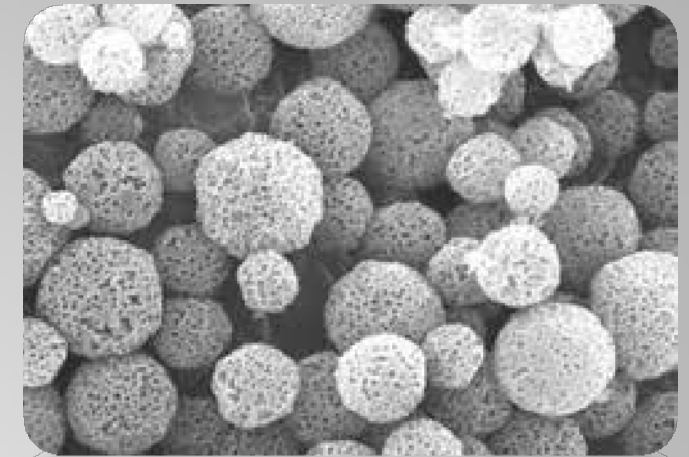
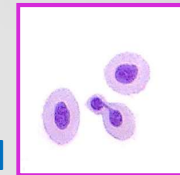
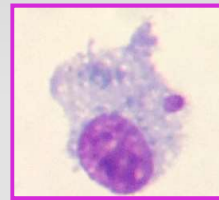
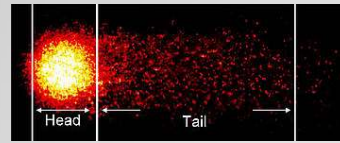


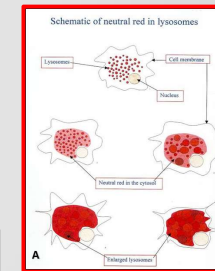
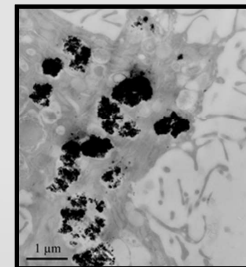
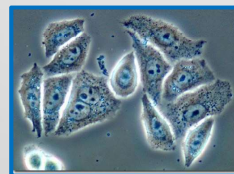
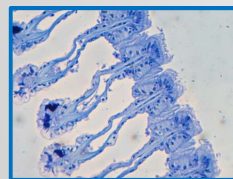
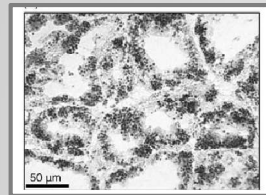


Monitoraggio ambientale



# RISPOSTE CELLULARI ALLA CONTAMINAZIONE AMBIENTALE

M.Nigro; G.Frenzilli;  
P.Guidi; M.Bernardeschi;



progetto Nazionale  
Ricerche in Antartide



biomarker in organismi  
sentinella di acque dolci



Dipartimento di Medicina  
Clinica e sperimentale  
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**n-TiO<sub>2</sub> and CdCl<sub>2</sub> co-exposure to titanium dioxide nanoparticles and cadmium: Genomic, DNA and chromosomal damage evaluation in the marine fish European sea bass (*Dicentrarchus labrax*)**

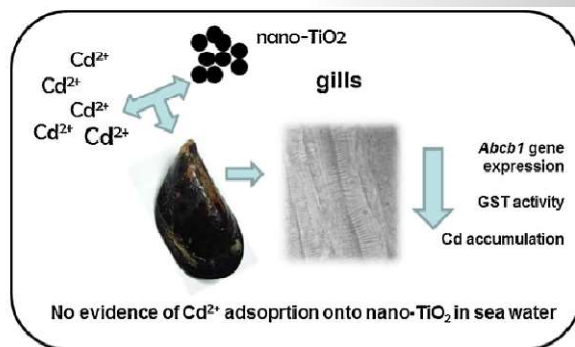
M. Nigro<sup>a,1</sup>, M. Bernardeschi<sup>a,1</sup>, D. Costagliola<sup>b</sup>, C. Della Torre<sup>c,2</sup>, G. Frenzilli<sup>a,\*,</sup> P. Guidi<sup>a</sup>, P. Lucchesi<sup>a</sup>, F. Mottola<sup>b</sup>, M. Santonastaso<sup>b</sup>, V. Scarcelli<sup>a</sup>, F. Monaci<sup>c</sup>, I. Corsi<sup>c</sup>, V. Stingo<sup>a</sup>, L. Rocco<sup>b</sup>



## Effetti della co-esposizione a TiO<sub>2</sub> e contaminanti «classici» : diossina; cadmio



### PRIN 2009-FHHP2W



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**Titanium dioxide nanoparticles modulate the toxicological response to cadmium in the gills of *Mytilus galloprovincialis***

Camilla Della Torre<sup>a,1</sup>, Teresa Balbi<sup>b</sup>, Giacomo Grassi<sup>a</sup>, Giada Frenzilli<sup>c</sup>, Margherita Bernardeschi<sup>c</sup>, Arianna Smerilli<sup>d</sup>, Patrizia Guidi<sup>c</sup>, Laura Canesi<sup>b</sup>, Marco Nigro<sup>c</sup>, Fabrizio Monaci<sup>a</sup>, Vittoria Scarcelli<sup>c</sup>, Lucia Rocco<sup>d</sup>, Silvano Focardi<sup>a</sup>, Marco Monopoli<sup>e</sup>, Ilaria Corsi<sup>a,\*,</sup>



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**Interactive effects of n-TiO<sub>2</sub> and 2,3,7,8-TCDD on the marine bivalve *Mytilus galloprovincialis***

Laura Canesi<sup>a</sup>, Giada Frenzilli<sup>b,\*</sup>, Teresa Balbi<sup>a</sup>, Margherita Bernardeschi<sup>b</sup>, Caterina Ciacci<sup>c</sup>, Simonetta Corsolini<sup>d</sup>, Camilla Della Torre<sup>d</sup>, Rita Fabbri<sup>a</sup>, Claudia Faleri<sup>e</sup>, Silvano Focardi<sup>d</sup>, Patrizia Guidi<sup>b</sup>, Anton Kočan<sup>f</sup>, Antonio Marcomini<sup>g</sup>, Michela Mariottini<sup>d</sup>, Marco Nigro<sup>b</sup>, Karla Pozo-Gallardo<sup>d,f</sup>, Lucia Rocco<sup>h</sup>, Vittoria Scarcelli<sup>b</sup>, Arianna Smerilli<sup>a</sup>, Ilaria Corsi<sup>d</sup>



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**Genomic and chromosomal damage in the marine mussel *Mytilus galloprovincialis*: Effects of the combined exposure to titanium dioxide nanoparticles and cadmium chloride**

L. Rocco<sup>a,\*</sup>, M. Santonastaso<sup>a</sup>, M. Nigro<sup>b</sup>, F. Mottola<sup>a</sup>, D. Costagliola<sup>a</sup>, M. Bernardeschi<sup>b</sup>, P. Guidi<sup>b</sup>, P. Lucchesi<sup>b</sup>, V. Scarcelli<sup>b</sup>, I. Corsi<sup>c</sup>, V. Stingo<sup>a</sup>, G. Frenzilli<sup>b</sup>



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**Influence of titanium dioxide nanoparticles on 2,3,7,8-tetrachlorodibenzo-p-dioxin bioconcentration and toxicity in the marine fish European sea bass (*Dicentrarchus labrax*)**

Camilla Della Torre<sup>a</sup>, Francesco Buonocore<sup>b</sup>, Giada Frenzilli<sup>c</sup>, Simonetta Corsolini<sup>a</sup>, Andrea Brunelli<sup>d</sup>, Patrizia Guidi<sup>c</sup>, Anton Kočan<sup>e</sup>, Michela Mariottini<sup>a</sup>, Filomena Mottola<sup>f</sup>, Marco Nigro<sup>c</sup>, Karla Pozo<sup>a</sup>, Elisa Randelli<sup>b</sup>, Maria Luisa Vannuccini<sup>a</sup>, Simona Picchiotti<sup>b</sup>, Marianna Santonastaso<sup>f</sup>, Vittoria Scarcelli<sup>c</sup>, Silvano Focardi<sup>a</sup>, Antonio Marcomini<sup>d</sup>, Lucia Rocco<sup>f</sup>, Giuseppe Scapigliati<sup>b</sup>, Ilaria Corsi<sup>a,\*</sup>



# Valutazione della suscettibilità di specie a rischio nei confronti dei contaminanti classici ed emergenti: indagini su cellule *in vitro*

Anal Bioanal Chem (2010) 396:619–623  
DOI 10.1007/s00216-009-3261-3

ORIGINAL PAPER

## Genotoxic potential of TiO<sub>2</sub> on bottlenose dolphin leukocytes

Margherita Bernardeschi · Patrizia Guidi ·  
Vittoria Scarcelli · Giada Frenzilli · Marco Nigro

Marine Environmental Research 100 (2014) 68–73



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Effects of *in vitro* exposure to titanium dioxide on DNA integrity of bottlenose dolphin (*Tursiops truncatus*) fibroblasts and leukocytes



Giada Frenzilli<sup>a,1</sup>, Margherita Bernardeschi<sup>a,1</sup>, Patrizia Guidi<sup>a</sup>, Vittoria Scarcelli<sup>a</sup>,  
Paolo Lucchesi<sup>a</sup>, Letizia Marsili<sup>b</sup>, Maria Cristina Fossi<sup>b</sup>, Andrea Brunelli<sup>c</sup>, Giulio Pojana<sup>d</sup>,  
Antonio Marcomini<sup>c</sup>, Marco Nigro<sup>a,\*</sup>

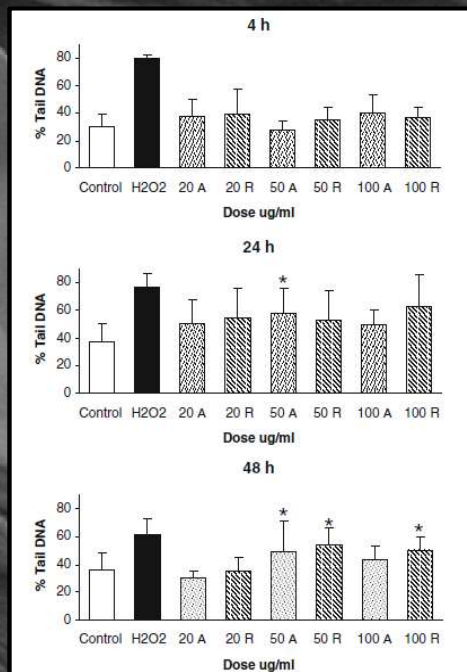
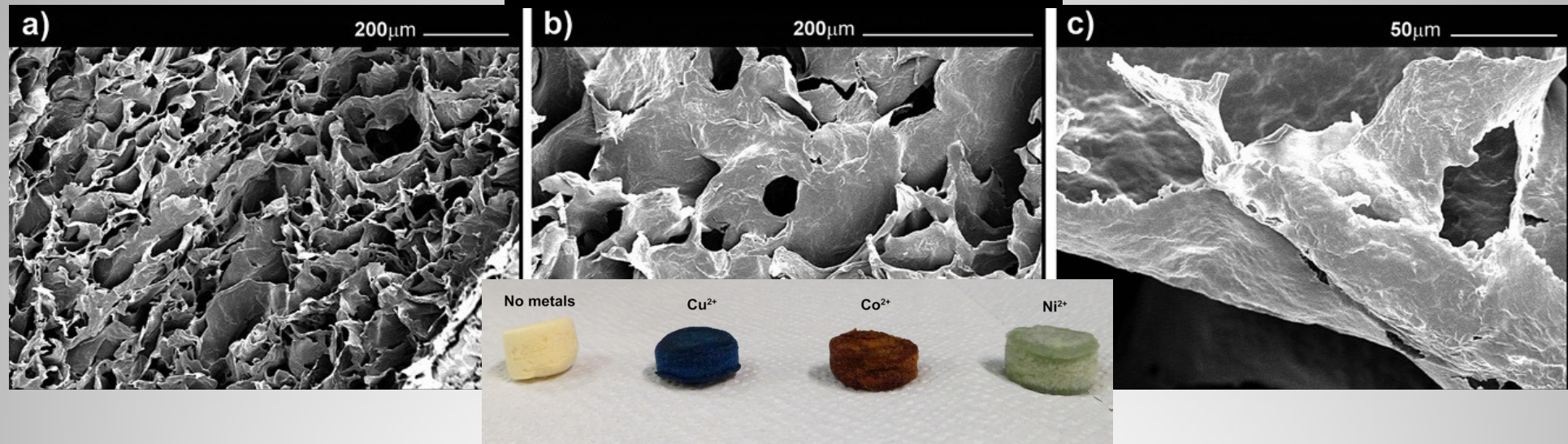


Fig. 2 Effects of TiO<sub>2</sub> anatase (A) and rutile (R) exposure on the DNA integrity of bottlenose dolphin leukocytes after 4 h, 24 h and 48 h exposure. Mean DNA migration (±st. dev.) was calculated on 50 cells scored per dose/time. Results from five specimens were cumulated. \*Significant difference with respective control (ANOVA,  $p < 0.05$ )

## Nanomateriali per la Bonifica associata al Dewatering

- Si propone di sviluppare l'utilizzo di materiali nano-strutturati ed ecocompatibili per il trattamento di matrici ambientali contaminate (es. sedimenti da dragaggi portuali)

### Nano-spugne celluloseche



### ciclodestrine

