

Supplementary Material

Molecular Impacts of Dietary Exposure to Nanoplastics Combined or Not with Arsenic in the Caribbean Mangrove Oysters (*Isognomon Alatus*)

Marc Lebordais ^{1,2}, Zélie Venel ¹, Julien Gigault ³, Valerie S. Langlois ² and Magalie Baudrimont ^{1,*}

¹ Université de Bordeaux, CNRS, UMR EPOC 5805, Place du Dr Peyneau, 33120 Arcachon, France; zelie.venel@gmail.com (Z.V.); magalie.baudrimont@u-bordeaux.fr (M.B.)

² Centre Eau Terre Environnement, Institut national de la recherche scientifique (INRS), 490 rue de la Couronne Québec City, QC G1K 9A9, Canada; Marc.Lebordais@ete.inrs.ca (M.L.); Valerie.Langlois@inrs.ca (V.L.)

³ Université Laval, UMI Takuvik 3376, 1045 avenue de la Médecine, Québec City, QC G1V 0A6, Canada; julien.gigault@takuvik.ulaval.ca

* Correspondence: magalie.baudrimont@u-bordeaux.fr; Tel.: +33-(0)-5-5622-3927

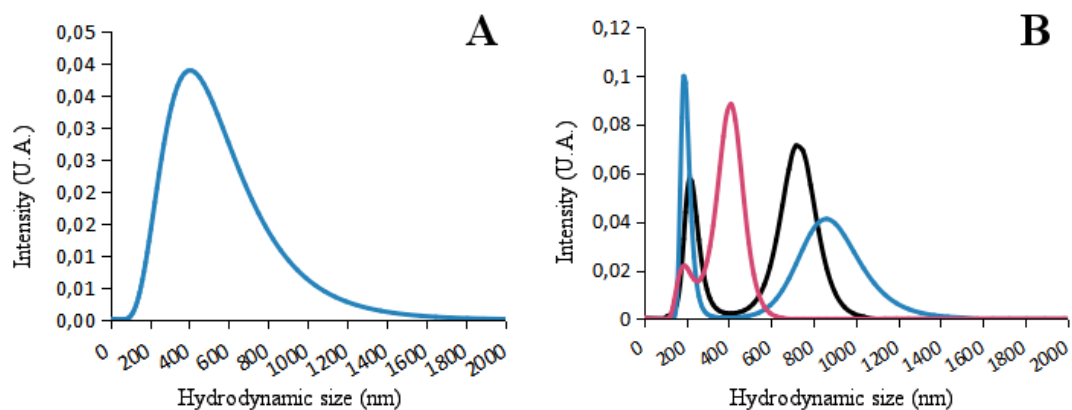


Figure S1. Size distribution of NPG nanoparticles measured by DLS on a Vasco Flex (using Sparse Bayesian Learning algorithm) showing the hydrodynamic size for overall nanoparticles in the dispersion (A), and the size distribution for each NPG batch presented with a different colour (B).

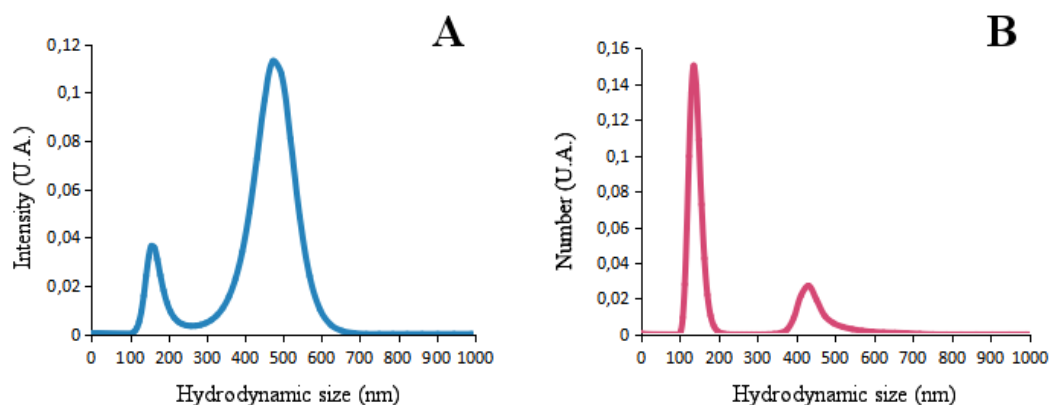
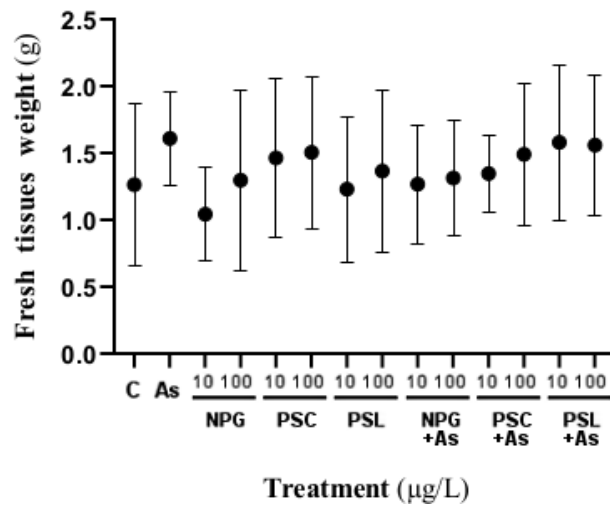
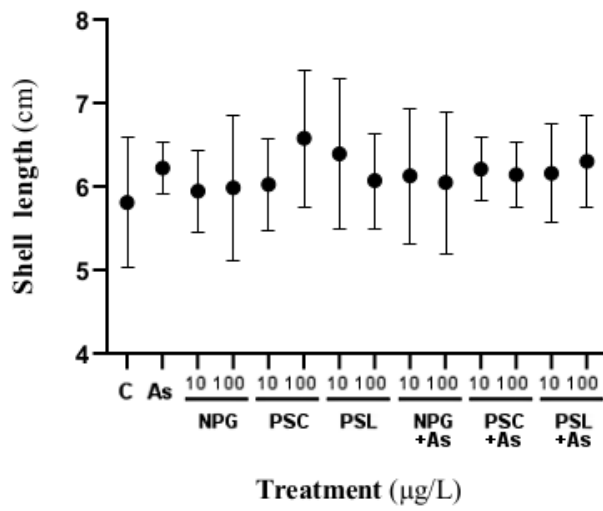


Figure S2. Size distribution of PSC nanoparticles measured by DLS on a Vasco Flex (using Sparse Bayesian Learning algorithm) showing the hydrodynamic size for overall nanoparticles in the dispersion (A), and the size distribution for each PSC batch (B).

A



B



C

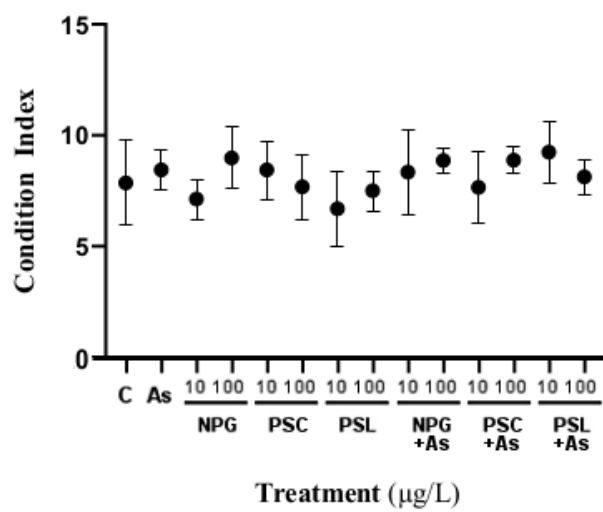


Figure S3. Comparisons of *I. alatus* biometric parameters after one week exposure ($n = 4 \pm \text{sd}$). Fresh tissues weight in g (A), shell length in cm (B), and Condition Index (C).

Table S1. Primers used for quantifying gene expression by qPCR.

Genes of interest	Full gene names Forward (F) Reverse (R) primers	Associated cell functions
<i>β-actine</i> *	Actin beta F : AACGAGCGATTTCAGATGTCC R : CGATTCCTGGGTACATGGTT	Microfilaments
<i>rpl7</i> *	Ribosomal protein L7 F : CCCAGGAAGGTCATGCAGTT R : TCCCAGAGCCTTCTCGATGA	Ribosomal sub-unit
<i>cav</i>	Caveolin F : CGTCGAGATCCAGACCTGTT R : ACAGCATTGACTGCGTATGG	Endocytosis and vesicle transport
<i>cltc</i>	Clathrin heavy chain F : AGACTCAGGACCCAGAGGAC R : ATCACACGGGTTCTATCGGC	
<i>bax</i>	bcl2 associated X apoptosis regulator F : AACTGGGGCAGAGTTGGATG R : AATTGCTTCCCAGCCTCCTC	Cell cycle regulation
<i>gadd45</i>	Growth arrest DNA damage F : TTGGCTTGACAAAAGTGCCG R : CTGACAACCTGCATCTCGGT	
<i>p53</i>	Tumor protein p53 F : CGATGATCGGGTTCAGCAGA R : GAGCTCTCTCAACACAGCCA	
<i>cat</i>	Catalase F : CGAGGCTAGCCCAGACAAAA R : TTGGGGAAATAGTTGGGGGC	Oxidative stress
<i>gapdh</i>	Glyceraldehyde-3-phosphate dehydrogenase F : CACGGCAACACAGAAGGTTG R : CCCTTCTGAAGTCGGCAAGT	
<i>sod1</i>	Superoxide dismutase Cu/Zn F : AGACTGCGTCACATGCTTCA R : GCGTCATGTAGGGGATCTGG	
<i>cox1</i>	Mitochondrial encoded cytochrome c oxidase 1 F : GTTGCCTTGGTCGCTAGACT R : GAGCGTCTTGGGCTTAGTCA	Mitochondrial metabolism
<i>12S</i>	Mitochondrial encoded 12S rRNA F : TCAGGTGTTACACAGCCGTC R : GCAGGCGTTTTAATCCCGTC	
<i>mdr</i>	ATP Binding Cassette Subfamily F : GCATGTTGCAAGCCTGTCAA R : CAGTCAACTCAAGCAACCGC	Detoxification

* : reference genes