

*Project research goals*

**BIVALGENE:**

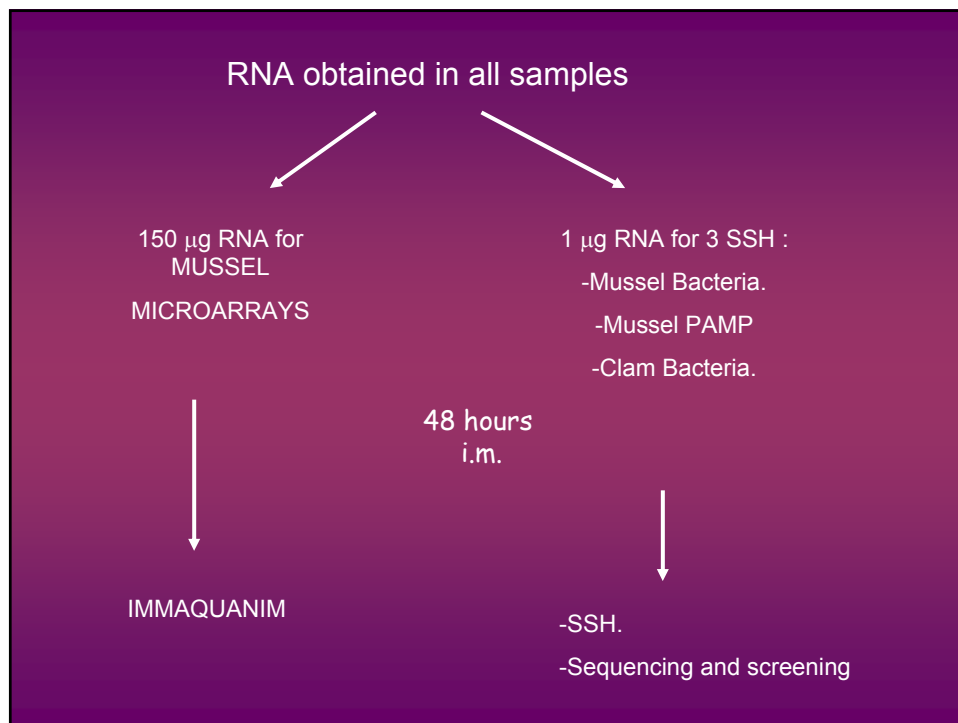
- - Search for the best immunostimulation conditions:
  - PAMP.
  - Pathogenic bacteria.
  - Highest response.
  
- - Search genes involved on immune responses:
  - RT-PCR degenerate primers
  - SSH
  - Microarray (IMAQUANIM)

## Search adequate immunostimulant:

. Several treatments alone or combined.

.  $\beta$ -glucans more detailed study:  
Immune response mussel and clam

- NO.
- ROIs.
- Bactericidal activity.
- Antiviral activity.



**FUNCTIONAL GENOMICS OF RESPONSES OF TURBOT  
(*SCOPHTHAMUS MAXIMUS*) TO EXPERIMENTAL INFECTIONS OF  
ATYPICAL *AEROMONAS SALMONICIDA* AND NODAVIRUS.  
NRC Canadá/MEC España. NRC/SEPOCYT (2004NRC/1). 2004-2007.**

**GOAL:**

- To determine turbot genes expressed after bacterial and viral infections.

**RESULTS:**

- 4 libraries constructed (kidney, liver, bacteria, virus).
- Sequencing on going



Para ver esta película, debe disponer de QuickTime™ y de un descompresor TIFF (LZW).



**Chemical  
analysis and  
bacterial  
diversity  
associated to  
marine  
sediments  
affected by the  
“Prestige” oil-  
spill**

## Introduction

- In November 2002 Prestige tanker release more than 70000 tons of fuel that were spread along thousands of coast kilometers.
- Residual fuel: (Alzaga *et al.*, 2004)
  - 50 % of aromatic hydrocarbons,
  - 20 % of saturates
  - 35 % of resins and asphaltenes

### **Prestige-related Spanish National projects:**

- VEM 2003-20068-C05-01
- VEM2003-20021

### Molecular characterization of bacterial population in contaminated areas

Three types of samples:

- contaminated sediments  
(days after the accident)

- contaminated sand and rocks  
(1 year after the accident)

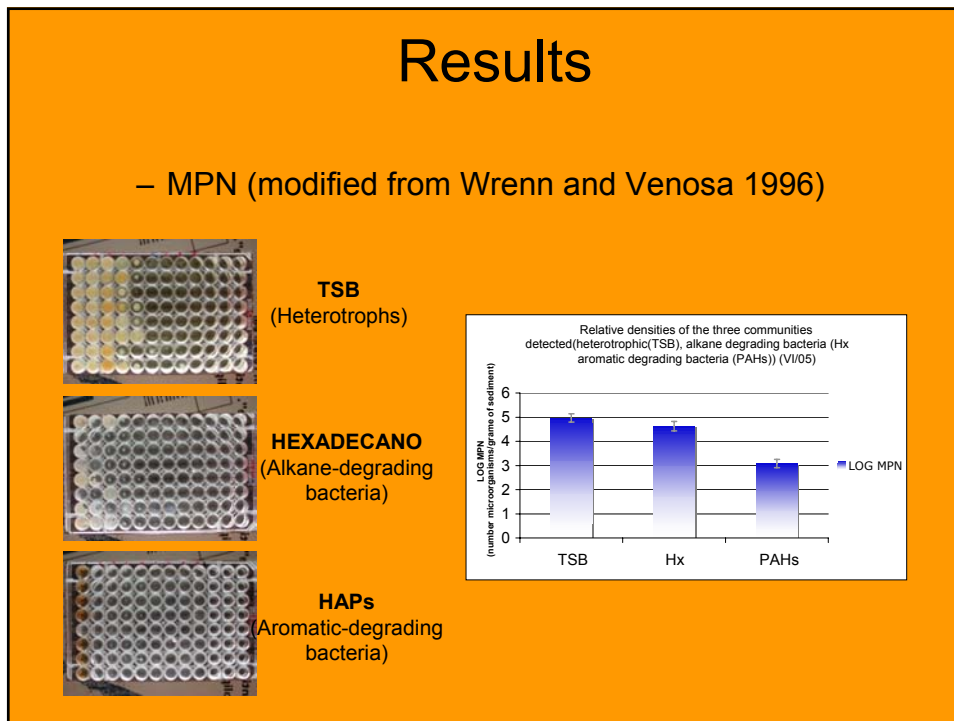
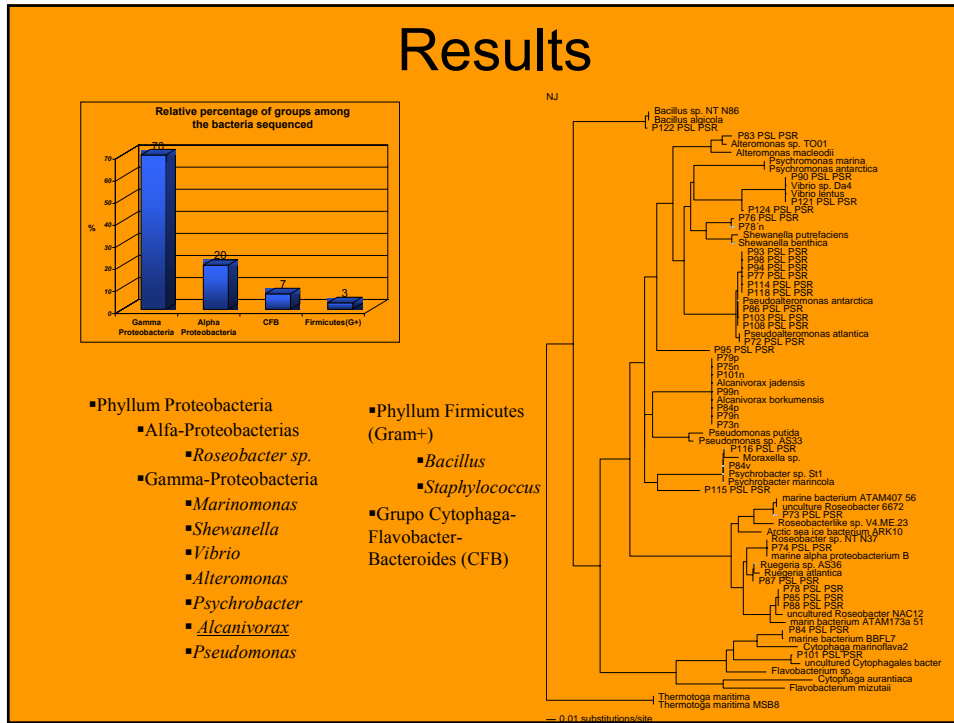
- experimental mesocosms

## November 2003

- Some days after the first oil spill from Prestige, sediment samples were collected by scuba-diving from the infralitoral zone next to “Islas Cíes” at Vigo (Spain).(CIS).
- Covered by a white layer.
- Colaboration with Dr. Solanas from UB and Dr. Albaigés from CID-CSIC.

## Objetives

- Determine the relative densities of different degrading-bacterial populations which lives in the sediment.
- Isolate and characterize bacterial strains from suspensions of the sediment.
- Classify the strains isolated by sequencing the gen which encodes for the small subunit of the ribosoms. (RNAr16S)
- Characterize the chemichals present in our sediments to check the origin of the pollution by using GC-MS.



## Objetivos del proyecyo



### • Degradar screening

- Eight strains out of the fifty-seven studied were proved to be alkane degraders.

Related to *Alcanivorax borkumensis*

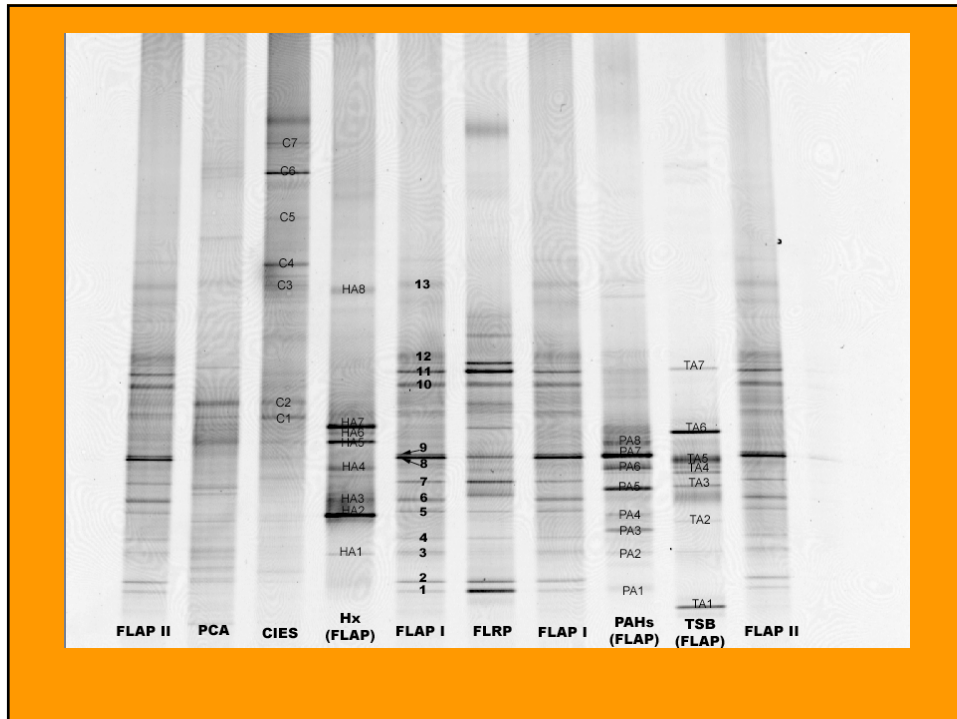
- However no strain seemed to have the ability for growing on PAHs.

One year after the accident, samples were taken from contaminated rocks and sand.



- Culturable strains
- Total DNA: characterization of non cultivable strains: DGGE
- DNA Libraries of the 16S

## Objetivos del proyecyo



### Projetc "IMPRESIÓN" Objectives:

-To isolate DNA, amplify the 16s subunit, conduct DNA libraries to determine the bacterial diversity in the different mesocosms.







Molecular identification: complementary to other studies

**Thank you**