ESTRATEGIAS DE ADMINISTRACIÓN ORAL DE MOLÉCULAS BIOACTIVAS Y MICROORGANISMOS

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Universidad de Almería

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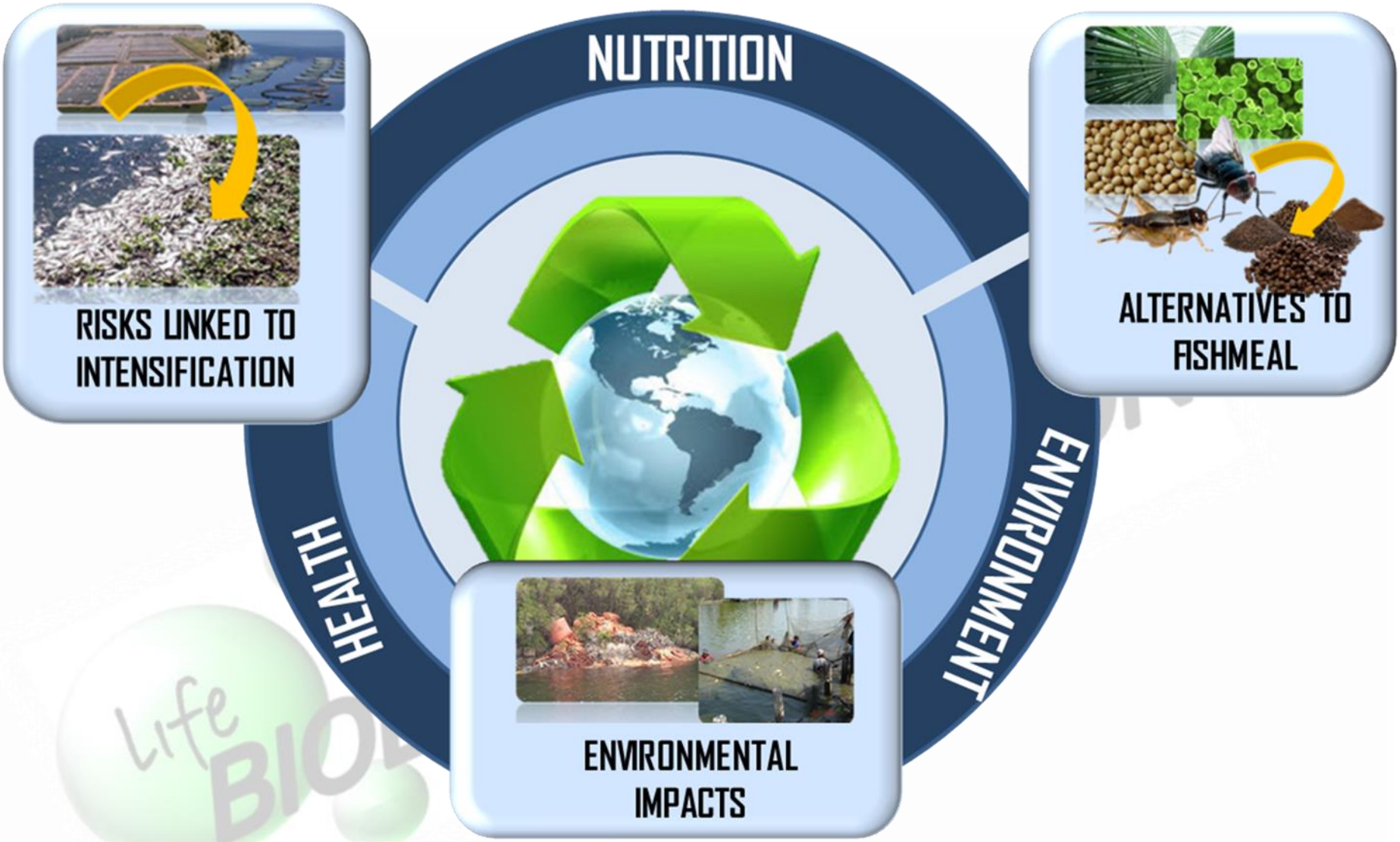
CVMAR+i
Industrial Innovation and Marine Biotechnology Valorisation

Life BIOENCAPSULATION

EBT UNIVERSIDAD DE ALMERÍA

Customized solutions for unusual aquafeeds


NUTRITION
HEALTH
ENVIRONMENT
RISKS LINKED TO INTENSIFICATION
ALTERNATIVES TO FISHMEAL
ENVIRONMENTAL IMPACTS

Diversifying nutrient sources

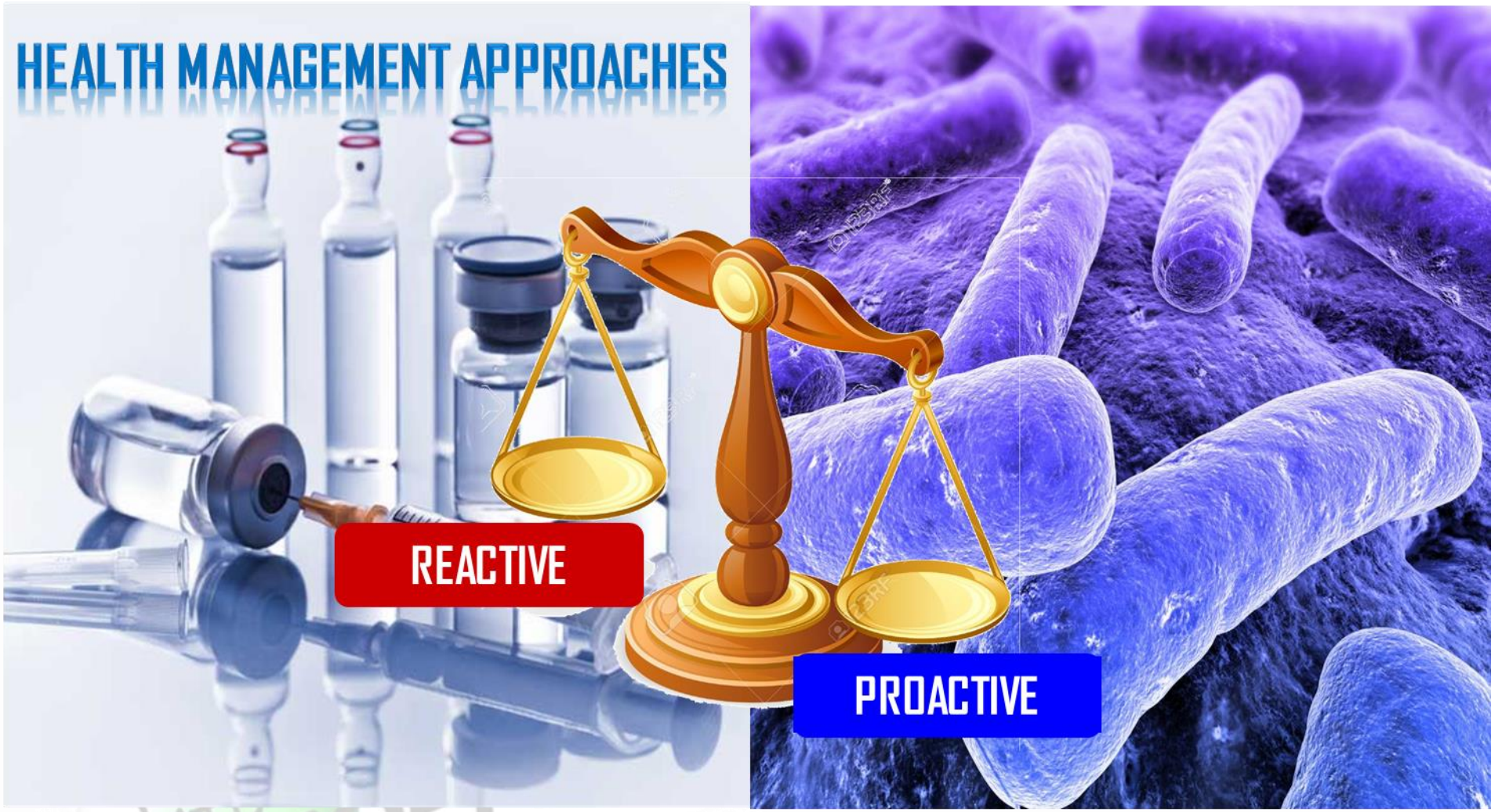
Customized diets with sustainable ingredients

Innovative feeds

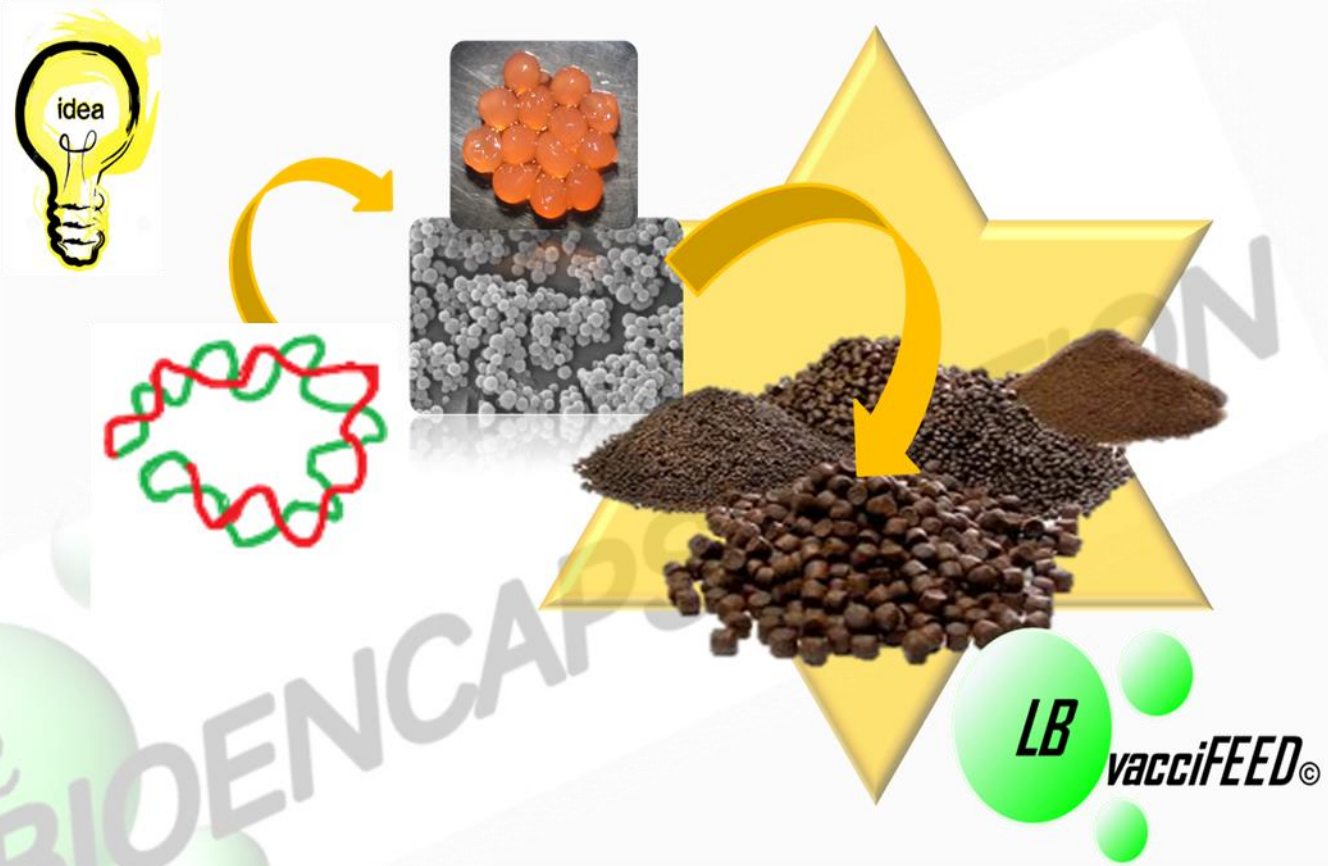
Reducing environmental impacts

Promoting health and welfare

Diet formulas with health promoters

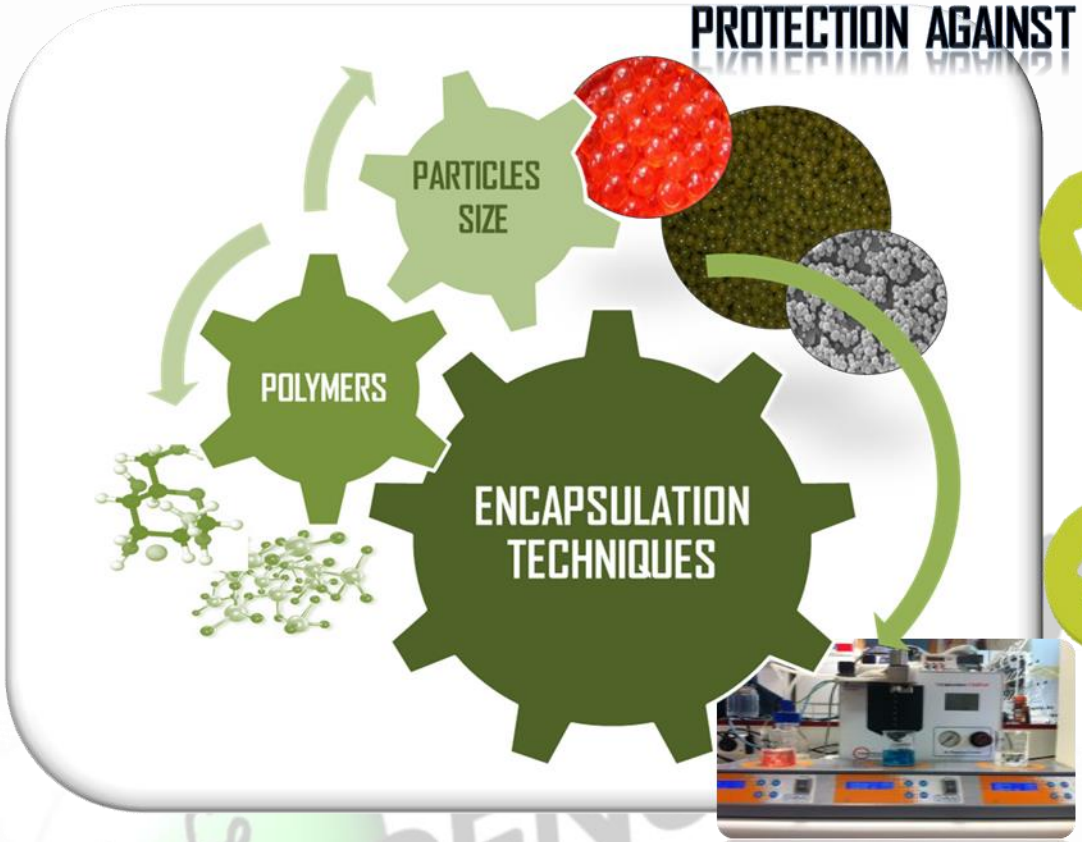

HEALTH MANAGEMENT APPROACHES
REACTIVE
PROACTIVE

KEY ACTIVITIES



KEY ACTIVITIES

ENCAPSULATION



KEY ACTIVITIES

KEY ACTIVITIES THROUGOUT THE ENCAPSULATION PROCESS:

Which are cost constraints of the ingredients?

Which particle size, density, and stability requirements for the encapsulated for the encapsulated substance?

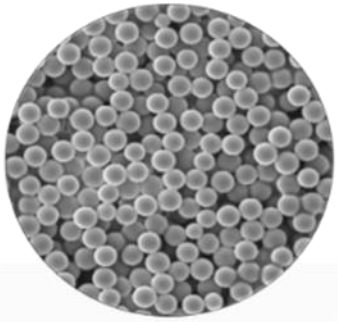
What is the optimum ingredient concentration in the particle?

What processing conditions must the capsule overcame before releasing its content?

What function must be encapsulate substance/microorganism achieve at its final destination?

KEY ACTIVITIES

ENCAPSULATION: ISOLATED PROTEIN



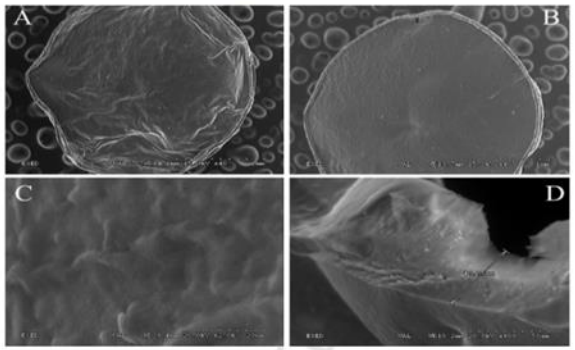


Fig. 3. SEM images of external (A and C), and internal (B) structure of alginate–chitosan beads. Detail of external wall thickness (D) of capsules containing 30 g L^{-1} alginate and 1 g L^{-1} chitosan.

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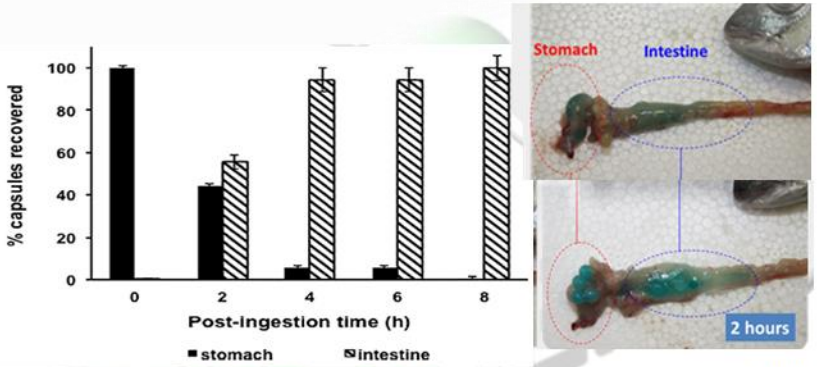
Effect of alginate and chitosan encapsulation on the fate of BSA protein delivered orally to gilthead sea bream (*Sparus aurata*)

M.I. Sáez, A.M. Barros, A.J. Vizcaíno, G. López, F.J. Alarcón, T.F. Martínez *

Departamento de Biología y Geología, Área de Zoología, Universidad de Almería, Carretera de Sacramento s/n, 04120, Almería, Spain



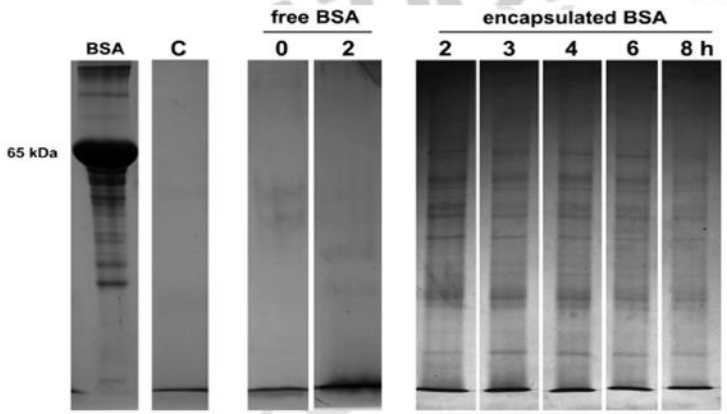
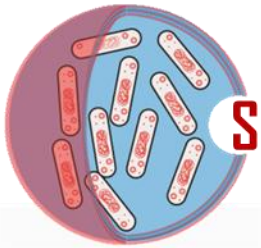


Fig. 10. Electrophoretic separation of BSA (lane BSA) and lumen contents of fish at different sampling times. Lane C: 24 h-fasted control fish (neither free nor encapsulated BSA ingested). Lanes "free-BSA": fish that received naked BSA. Lanes "encapsulated BSA": fish receiving BSA in beads containing 30 g L^{-1} alginate coated with 1 g L^{-1} chitosan.

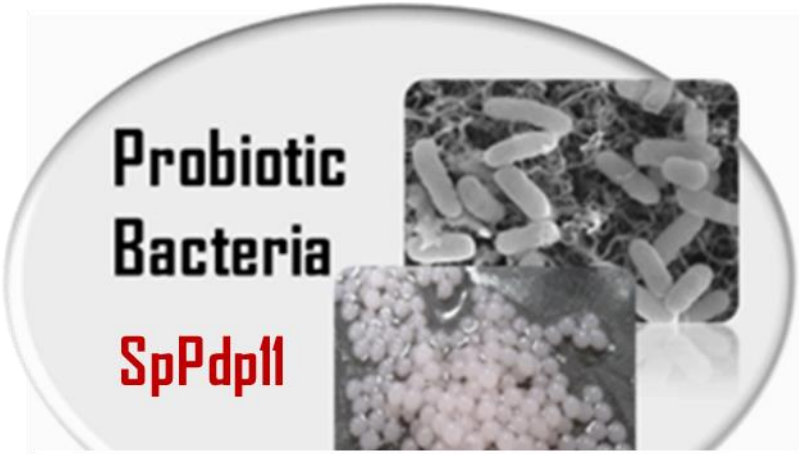
KEY ACTIVITIES

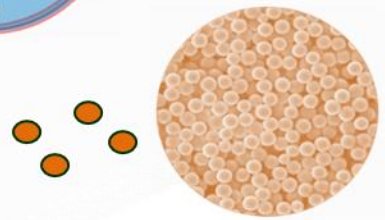
ENCAPSULATION: PROBIOTIC BACTERIA



SpPdp11

PATENT 201100385





Aquaculture Research, 2012, 43, 106–116 doi: 10.1111/j.1365-2109.2011.02809.x

Calcium alginate capsules for oral administration of fish probiotic bacteria: assessment of optimal conditions for encapsulation

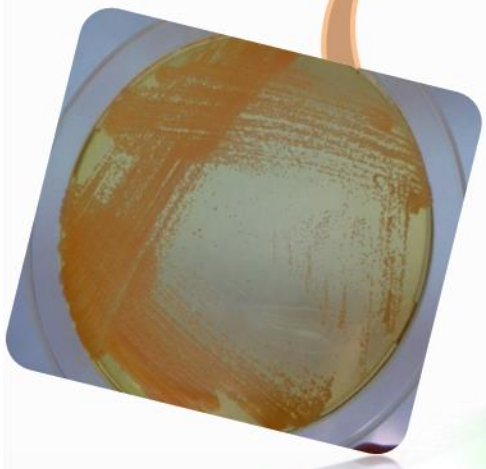
Pablo Rosas-Ledesma[1], Juan Manuel León-Rubio[1], Francisco Javier Alarcón[2], Miguel A. Moriñigo[1] & Maria Carmen Balebona[1]

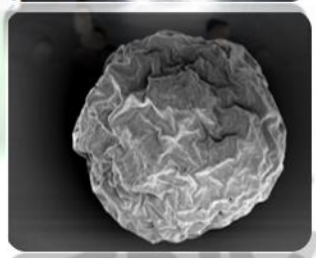
Survival of encapsulated probiotic cells through the gastrointestinal tract of Senegalense sole

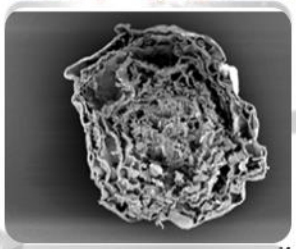
KEY ACTIVITIES

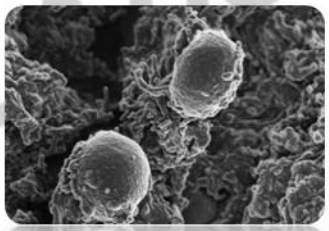
ENCAPSULATION: PROBIOTIC YEAST

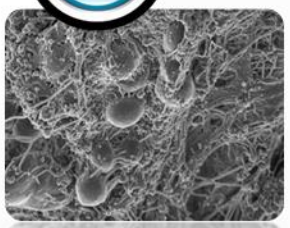
PATENT in process



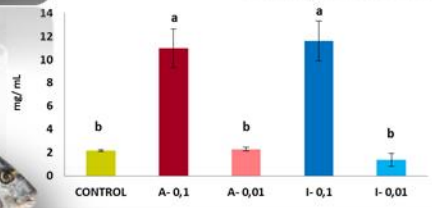




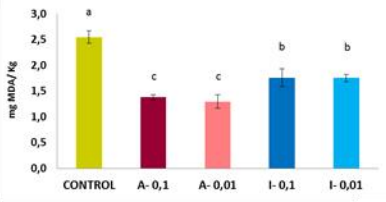




Inmunoglobulinas totales



T- BARS



KEY ACTIVITIES

DNA VACCINES IN AQUACULTURE

APEX-IHN

NOVARTIS

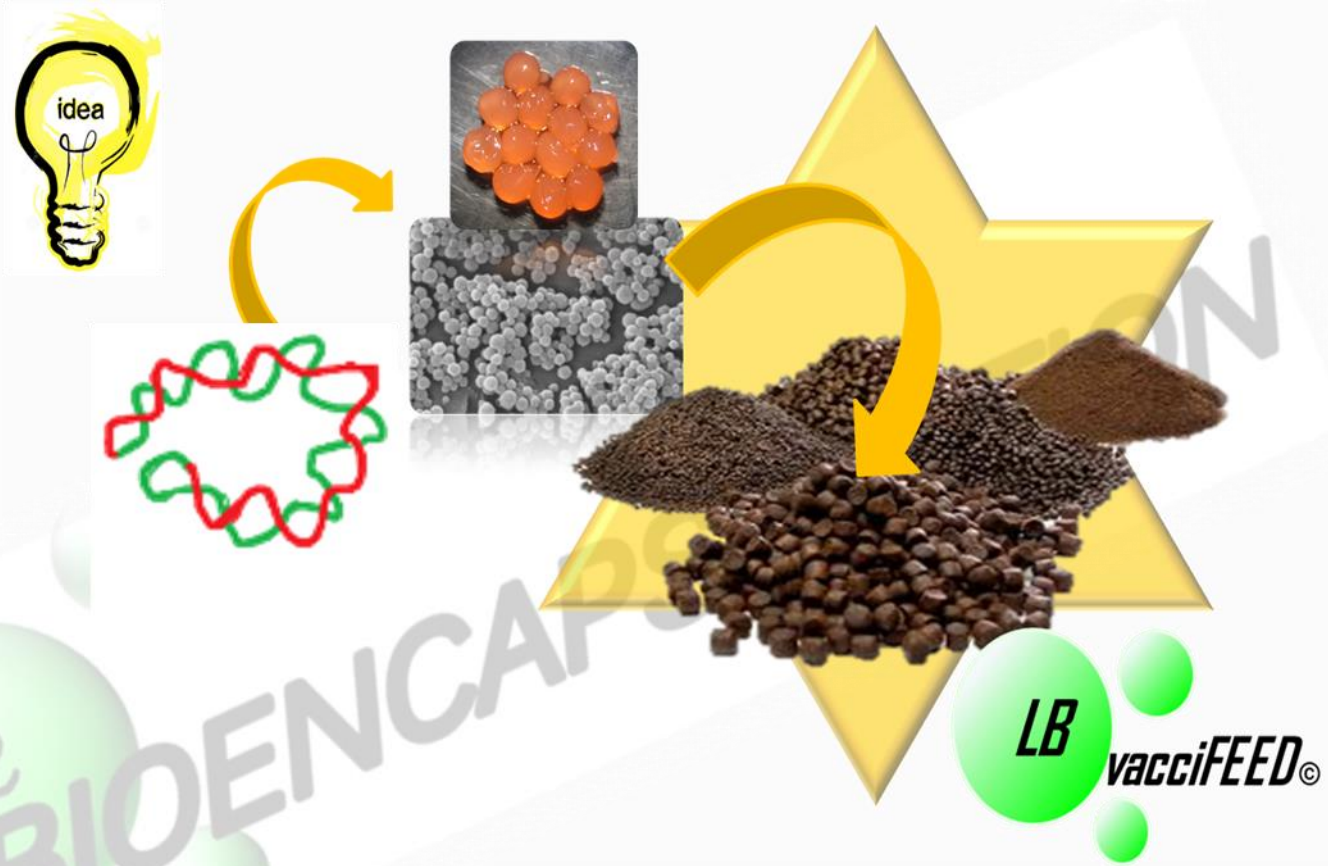
CLYNAV

Elanco

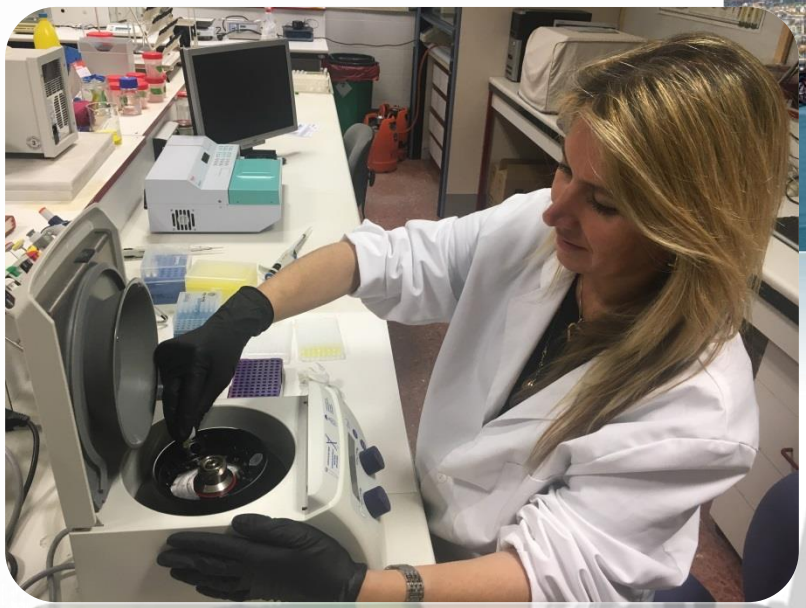
EU

DNA VACCINES

KEY ACTIVITIES



FROM LAB TO FARM



BIOENCAPSULATION

TEAM-BACKGROUND

SPIN-OFF 2016

BEST INNOVATIVE IDEA 2014

BEST BUSINESS PROJECT 2014

BEST ENTREPRENEURIAL IINITIATIVE 2015

COMPLEMENTARITY

Mabel Sáez
AGRICULTURAL ENGINEER, PhD

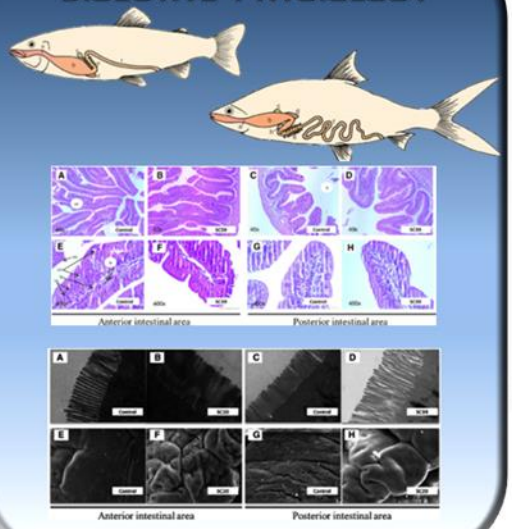
Tomás Martínez
VETERINARIAN, PhD

Javier Alarcón
BIOLOGIST, PhD

- Animal nutrition
- Fish nutrition
- Health and animal welfare
- Feed formulation and technologies for production
- Bioencapsulation
- Food and feed technology
- Industrial processes

AREAS OF EXPERTISE

DIGESTIVE PHYSIOLOGY



ORAL DELIVERY OF BIOACTIVE MOLECULES/CELLS

Probiotics DNA/proteins Particles

AQUAFEED MANUFACTURING

TRANSVERSALITY

RESOURCES

Lab and pilot scale platform for feed manufacturing and encapsulation

Life BIOENCAPSULATION

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Customized solutions for unusual aquafeeds

Gracias por su atención

Mabel Sáez Casado