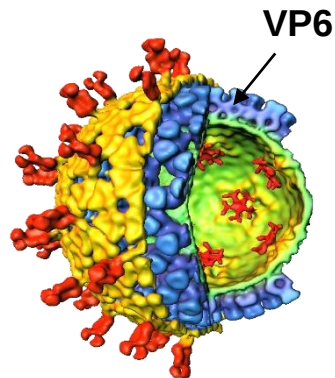


NANO VHH ANTIBODIES AGAINST ROTAVIRUS AND NOROVIRUS



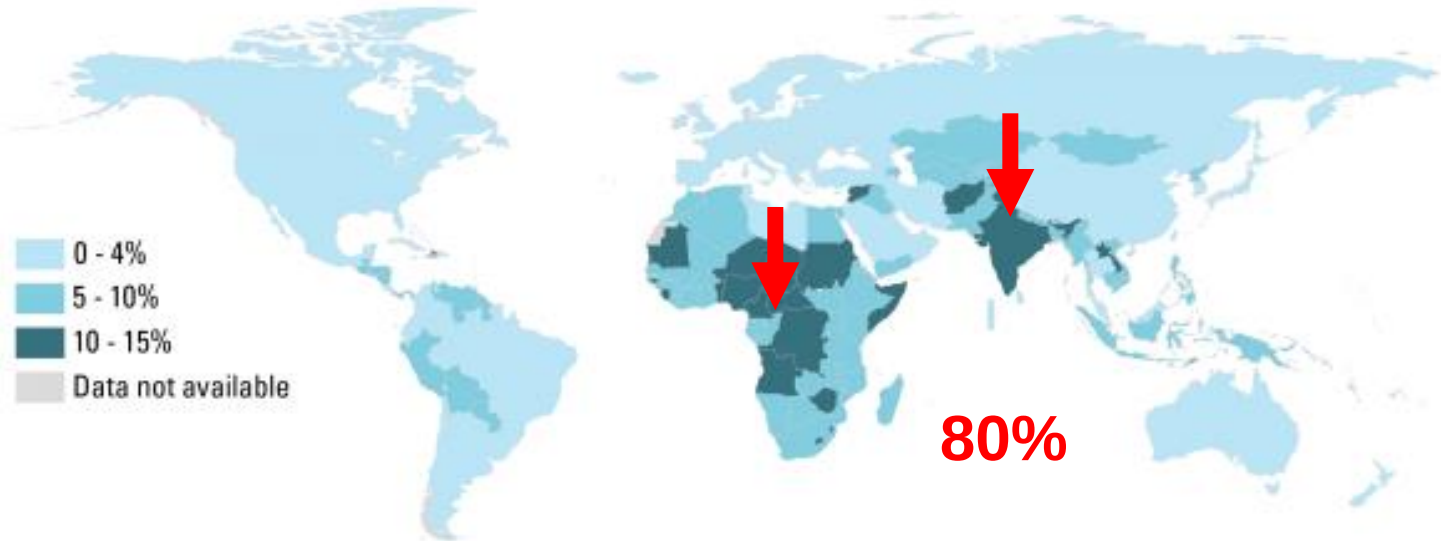
Rotavirus and Norovirus: A Global Concern

unicef 2015

UNICEF Data: Monitoring the Situation of Children and Women

☐ Diarrhea is a leading cause of death in children

☐ 530,000 deaths/year



80%

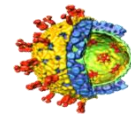
Norovirus:



First etiological agent associated with foodborne diseases

~~No Vaccine~~

Rotavirus:



Main cause of diarrhea in children



Technology Background: VHH

INTA

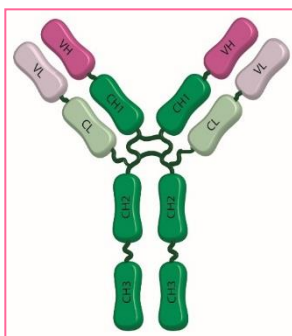


Recombinant Monoclonal
Antibody Fragment: VHH



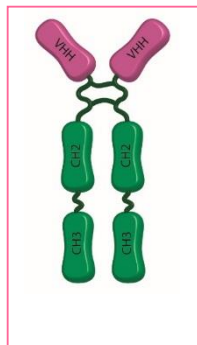
15kDa

Conventional IgG



IgG1

Heavy chain antibodies
derived from camelids



IgG2 - IgG3



Instituto Nacional de
Tecnología Agropecuaria



Ministerio de Agroindustria
Presidencia de la Nación

Technology Background: Applications

Diagnostic



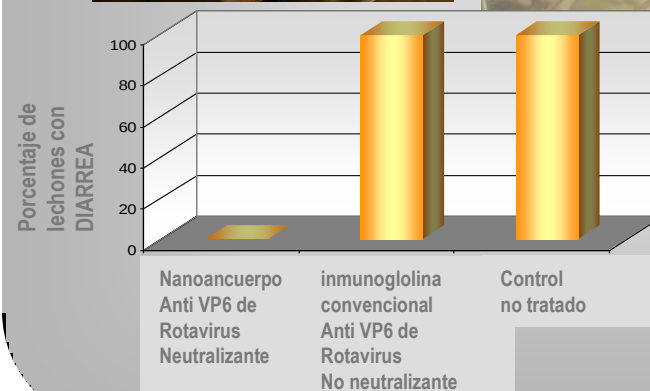
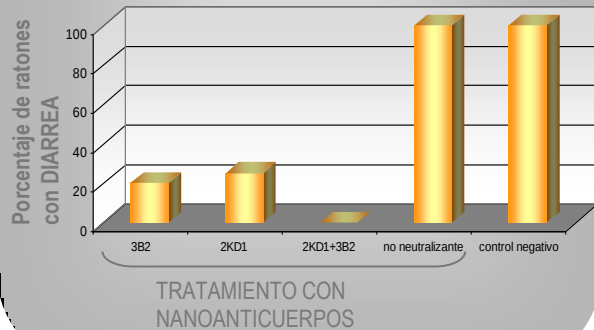
Positive Control

Revealing Molecule
Detection Molecule
Capture Molecule
Solid Support



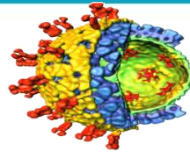
What We Have: Protective Activities

Animal Models:



What We Have: Legal Issues

Rotavirus



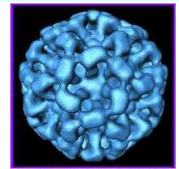
EMBL



European Molecular
Biology Laboratory

ACADEMIC COOPERATION AGREEMENT BETWEEN
THE INSTITUTE OF AGRICULTURAL TECHNOLOGY (INTA)
AND
THE EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL)
Molecular Biology Laboratory, from now on EMBL, legally located in
Molecular Biology Laboratory, Germany, represented in this document by its
Heidelberg, Williamson and National Institute of Buenos Aires
1439 St., city of Buenos Aires, jointly

Norovirus



National Institute of
Allergy and
Infectious Diseases

INTERINSTITUTIONAL AGREEMENT BETWEEN
THE NATIONAL INSTITUTES OF HEALTH
AND
NATIONAL INSTITUTE OF AGRICULTURAL TECHNOLOGY
NIH-INTA

is entered into between the National Institutes of Health ("NIH") within
"HHS") through the Office of Technology Transfer, NIH, having
Baltimore, Maryland 20852-3804, U.S.A and Instituto Nacional de
Agronomía, INTA), hereinafter referred Instituto Nacional de
Agronomía de Buenos Aires.

PatBase

Legal Status Timeline for Patent Family 42517765

MONOMERIC VHH DOMAIN DERIVED FROM ANTI-VP6 CAMELID ANTIBODIES, DII
PREVENTION AND TREATMENT METHODS FOR ROTAVIRUS INFECTIONS (US201
Displaying years 2008 to 2016

PatBase

Legal Status Timeline for Patent Family 57794709

SINGLE-DOMAIN VHH ANTIBODIES DIRECTED TO NOROVIRUS GI.1 AND GI.4 AN
Displaying years 2014 to 2016

INTA 100%

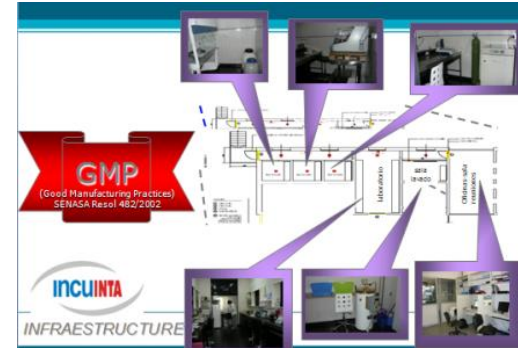
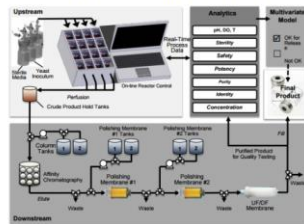
INTA 50%

What We Have: Achievements



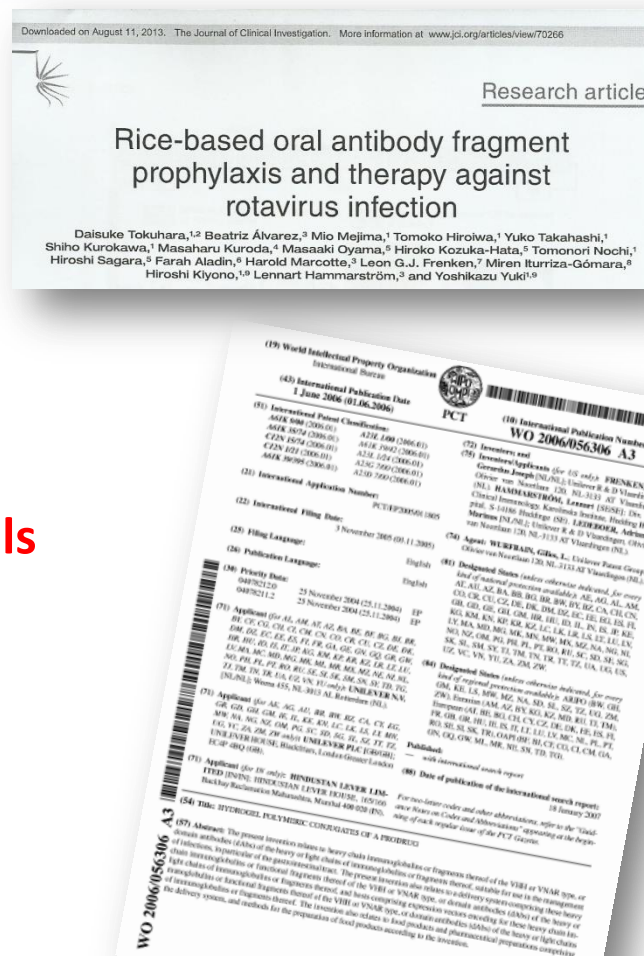
MIT
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
OFFICE OF SPONSORED PROGRAMS
NO COST COLLABORATION AGREEMENT
A RESEARCH AGREEMENT (the "Agreement") is made and entered into as of the 1st day of July, 2014, by and between the Massachusetts Institute of Technology ("MIT") and the University of Buenos Aires, Argentina ("UBA"). The Agreement is made in accordance with the terms and conditions of the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, and the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, both of which are incorporated by reference into this Agreement. The Agreement is made in accordance with the terms and conditions of the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, and the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, both of which are incorporated by reference into this Agreement. The Agreement is made in accordance with the terms and conditions of the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, and the MIT-UBA Collaboration Agreement, dated 1st day of July, 2014, both of which are incorporated by reference into this Agreement.

Integrated and Scalable Cyto-Technology
(InSCyT) biomanufacturing platform





Ministerio de Agroindustria
Presidencia de la Nación



Instituto Nacional de
Tecnología Agropecuaria

Opportunities and Threats: The Opportunity



1st VHH Norovirus

Offer a combine
solution

VHH Rotavirus: Better

Three type of partners:

- ✓ A company that produces vaccines
- ✓ A company interested in developing complementary technologies
- ✓ An risk investor or a venture capitalist

Learning From History

- ✓ Find a partner at an early stage...
- ✓ ...to jointly offer a solution to viruses which are the first cause of death in children worldwide



Germán Alejandro Linzer
IP Manager
Tech Transfer Office
National Institute for Agricultural Technology

Thank you