

1st. SYMPOSIUM ON RANAVIRUS

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Current understanding on
RANAVIRUSES
in
South-America

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BACKGROUND

- **FEW REPORTS**
 - Zupanovic et al. 1998
 - Galli et al. 2006
 - Fox et al. 2006
 - Mazzoni et al. 2009

BACKGROUND



VENEZUELA

- **Zupanovic et al. 1998**
 - Venezuela (Guatopo virus – GV)
 - *Bufo marinus* & *Leptodactylus* (free ranging)
 - Serology
 - Virus isolation
 - SDS-Page
 - Molecular methods
 - TEM

BACKGROUND



Guatopo virus – GV

- **Hyatt et al. 2000**
 - PCR & Sequencing
 - Comparison
- **GV ≠ FV3 & BIV**

BACKGROUND



Argentina

- Fox et al. 2006
- *Atelognathus patagonicus*
- Mortality event
- PCR (MCP)
- 100% similarity with FV3

BACKGROUND



Uruguay

- Galli et al. 2006
- *Rana catesbeiana*
 - Sick tadpoles (farmed)
- PCR (MCP & IE - ICP 18)
 - High homology with FV3

BACKGROUND



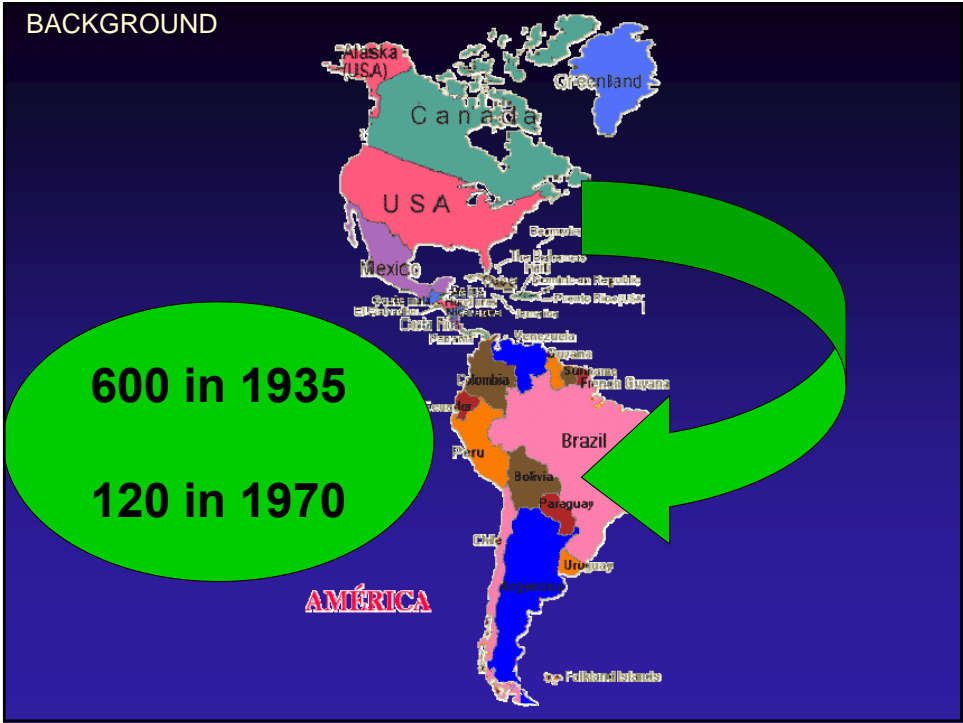
Brazil

- **Mazzoni et al. 2009**
- *Rana catesbeiana*
- **Virus isolation from sick tadpoles (farmed)**
- **Confirmed by:**
 - Histopathology
 - TEM
 - PCR & SEQUENCING
(MCP, POL II, and IE -ICP 18)
- **High homology with FV3.**

BACKGROUND



Presence of “FV3 like” viruses



HISTÓRIA

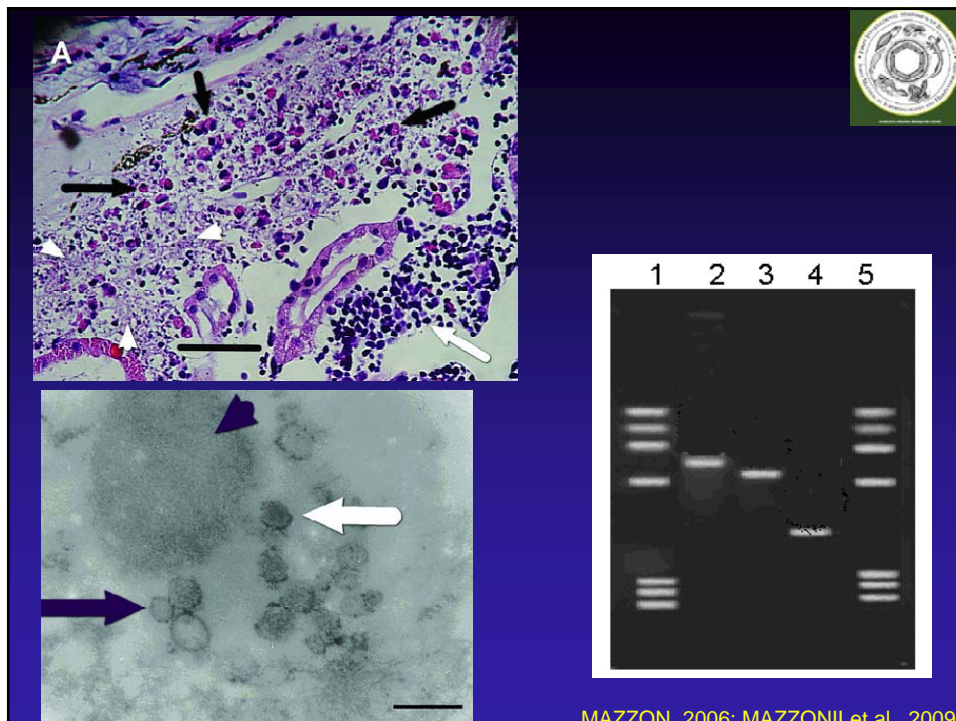


DIAGNOSTIC

•Detection in sick tadpoles (30 days old)



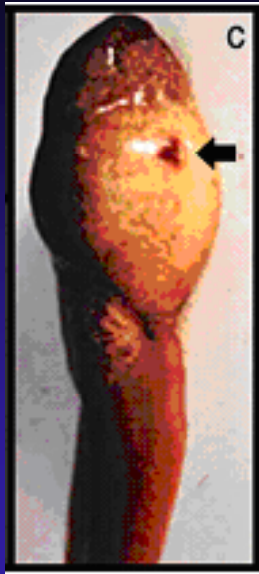
MAZZONI et al., 2009



MAZZONI, 2006; MAZZONI et al., 2009

DIAGNOSTIC

OLDER TADPOLES



MAZZONI, 2006



DIAGNOSTIC



- **10% Positive (PCR)**
- **No virus associated to lesions**
- **SEPTICEMIC**

DIAGNOSTIC

FROGS



MAZZONI, 2003

DIAGNOSTIC



MAZZONI, 2006



- **Bullfrogs are TEV - FV3 carriers**



PRESENCE ≠ DISEASE !!!!

WOLF et al., 1968; WILLIAMS et al., 2005; WHITTINGTON et al., 2010

QUESTIONS



- **FV3 in American Bullfrogs**
 - INTRODUCED
 - South-American Virus
- **Pathogenic to other Aquatic Organisms?**
- **Do amphibians co-evolve with RVs?**



FUTURE RANAVIRUS RESEARCH DIRECTIONS

- Surveillance on the presence of ranavirus in:
 - Introduced farmed American bullfrogs
 - Areas where American bullfrogs were introduced
 - Other areas
 - Compare isolates
- Characterization of South American ranaviruses
- Challenge studies in native aquatic organisms ?

THANKS !

