Monitoring viral pathogens in wild brown trout in the Czech Republic

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Lyngby

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Viral Diseases?

	VHSV		**IHNV**	
Year	Surveillance	Confirmed	Surveillance	Confirmed
2008	81	3	81	0
2009	91	0	91	0
2010	87	2	87	1
2011	89	1	89	1
2012	89	0	89	0
2013	100	5	100	0
2014	100	12	100	4
2015	111	1	111	0
2016	94	3	94	0

Situation

Veterinary Research Institute, Moravian Fishing Association (MFA) and Veterinary University are located in Brno

9 outbreaks from 2013/2014 located in farms on rivers under MFA administration

Date	River	*ST* (pc)	Other (pc)	°C	Serum
27. 11. 2015	1	26	*OM* 1, *SF* 5	4,0	
28. 11. 2015	2	28	-	11,0	
18. 4. 2016	3	30	-	6,8	
18. 4. 2016	4	30	-	9,9	
25. 9. 2017	5	15	-	12,8	15
2. 11. 2017	3	16	-	7,7	16
2. 11. 2017	4	17	-	7,1	17
8. 11. 2017	6	30	-	7,5	30
8. 12. 2017	7	30	-	3,3	30

OM – Oncorhynchus mykiss, *ST – Salmo trutta*, *SF – Salvelinus fontinalis*

Fish examination

- Weight and length : 16 g to 240 g (120 g)

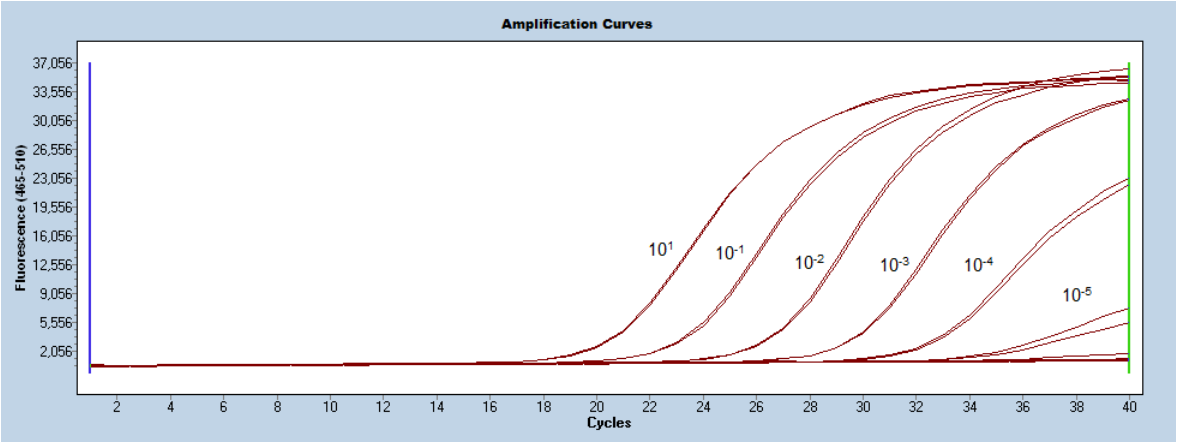
- Clinical signs
- P/A signs
- Wet mounds: skin, gills, gut
- Sampled for: histology, virology, serology

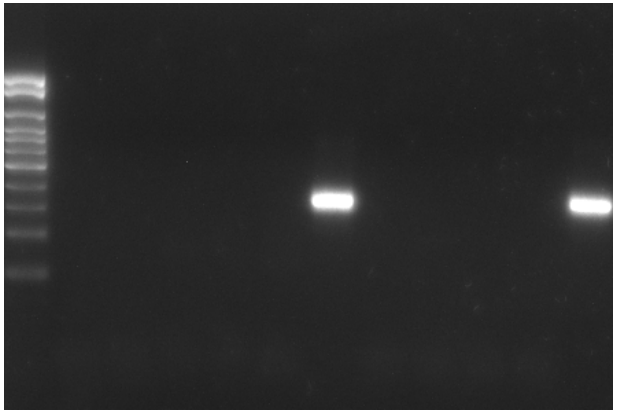
Samples virology

- spleen, cranial kidney and heart
- up to 10 fish per sample
- homogenized in 10x amount of medium
- centrifuged
- stored in - 80 °C

Molecular Diagnostics

- VHSV qPCR Jonstrup et al. 2013
- IHNV qPCR Purcell et al. 2013
- IPNV PCR Operveit et al. 2010



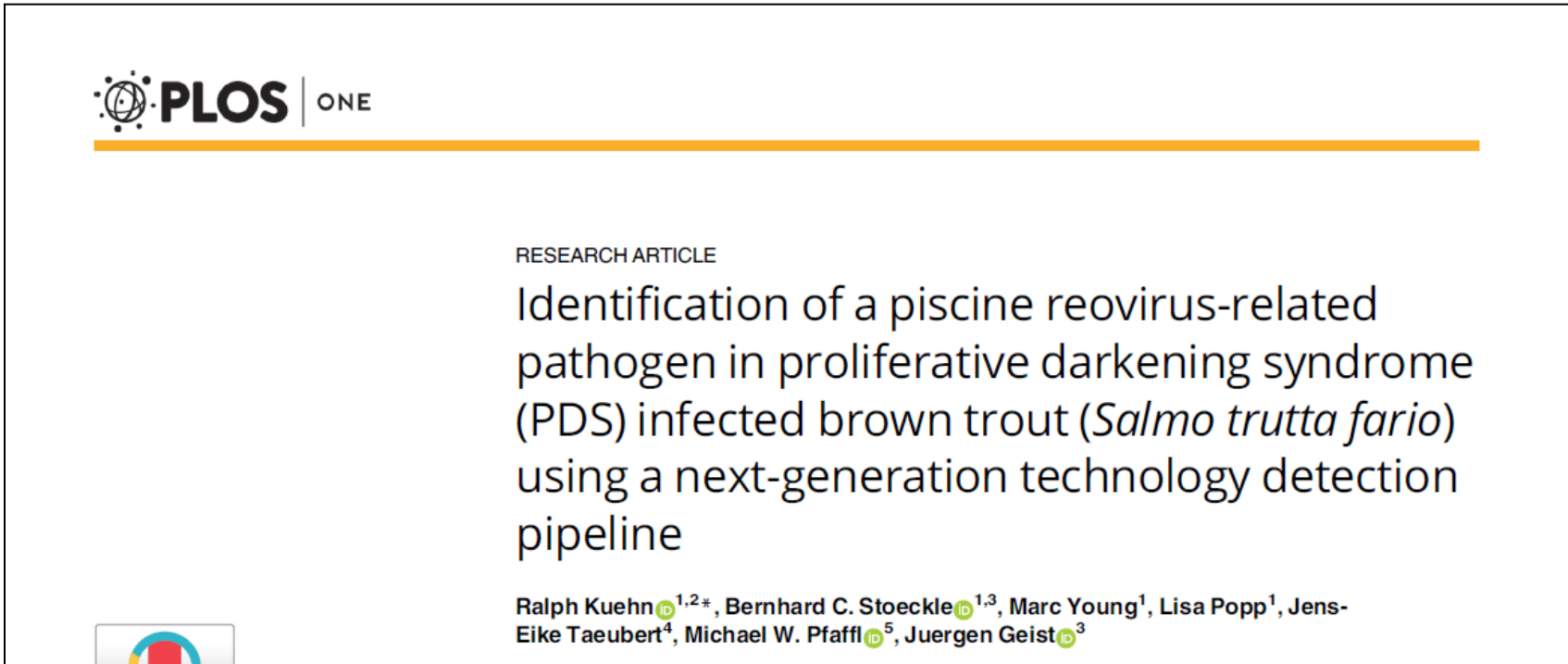


Serology

- ELISA detecting specific Ig
- Recent Czech isolates used as Ag:
  - VHSV CAPM V-684 (2016)
  - IHNV CAPM V-629 (2014)
- Rabbit Ig against trout Ig (Boorsma at Streefkerk 1979)

Testing 2019

- Dr. Mikolaj Adamek TiHo Hannover
- PRV
- SAV-2



PLOS ONE

RESEARCH ARTICLE

Identification of a piscine reovirus-related pathogen in proliferative darkening syndrome (PDS) infected brown trout (*Salmo trutta fario*) using a next-generation technology detection pipeline

Ralph Kuehn[1,2*], Bernhard C. Stoeckle[1,3], Marc Young[1], Lisa Popp[1], Jens-Eike Taeubert[4], Michael W. Pfaffl[5], Juergen Geist[3]

PRV

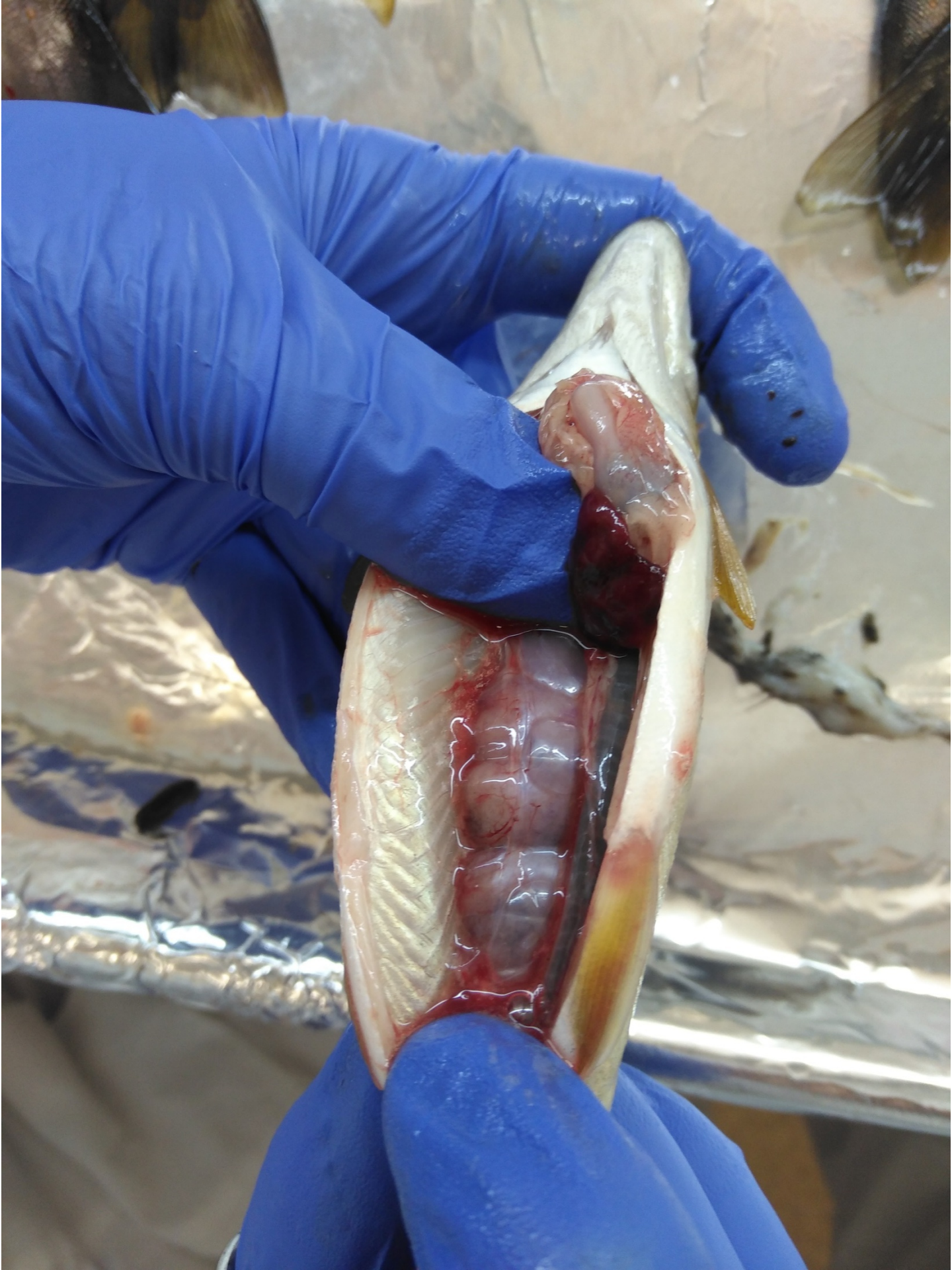
- 4 positive samples from 2 locations
- both from November 2015
- River 1 – 3/5 positive (brown trout only)
- River 2 – 1/3 positive

- viral load: 1,27E+03 - 2,73E+05

- Sequencing: PRV-3

Conclusions

- VHSV, IHNV, IPNV, SAV-2 not present in the examined fish
- VHSV and IHNV antibodies not present in the examined sera
- PRV-3b present in 2/7 examined locations
- No clinical signs typical for PRV present in the PRV-positive locations



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