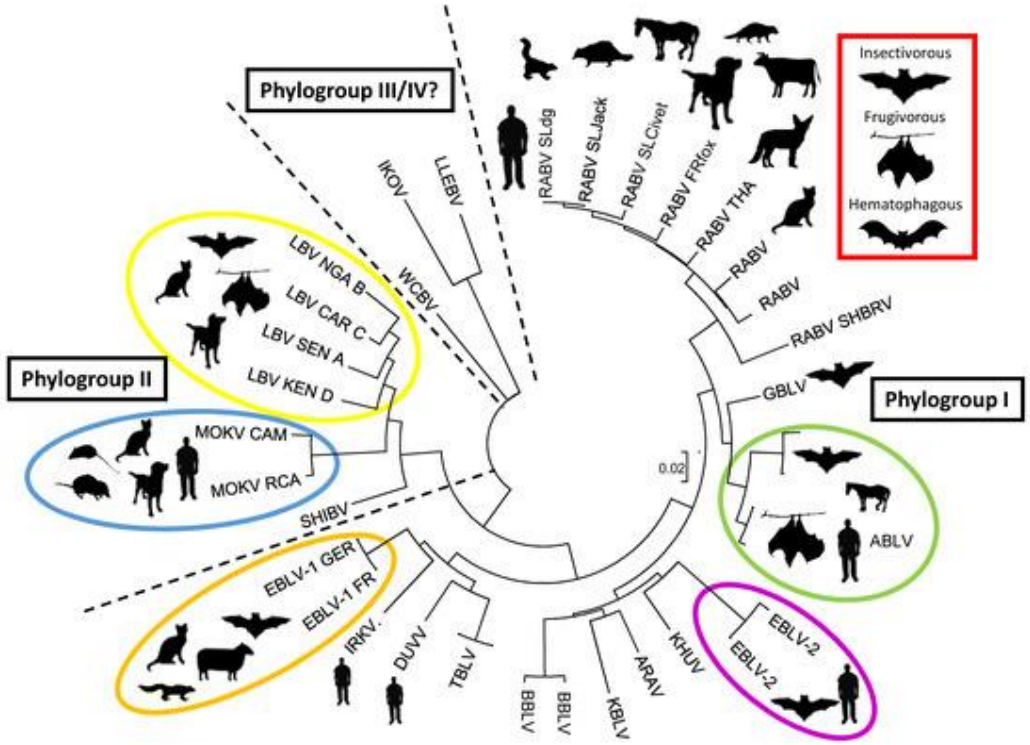
Molecular epidemiology of lyssaviruses in Poland

Anna Orłowska

Warszawa, 15.06.2022

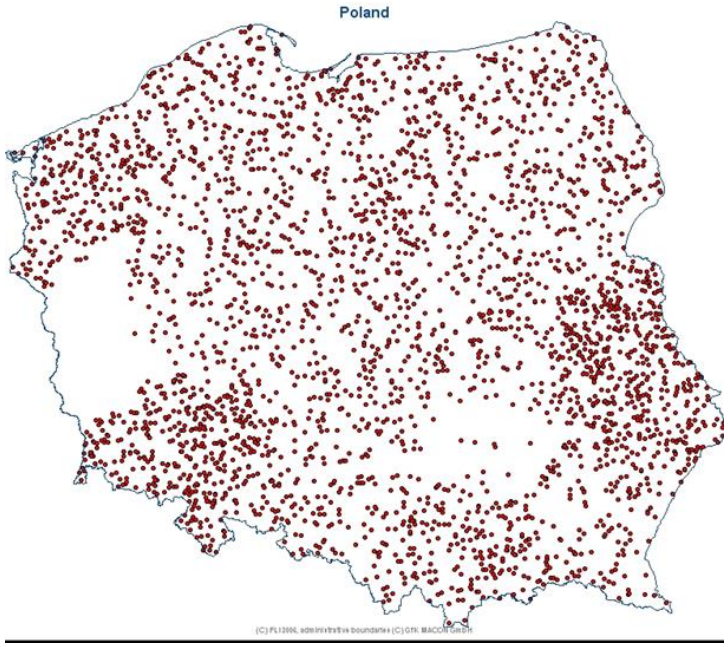


Three / four phylogroups formed based on cross-reactions with neutralizing antibodies, virus pathogenicity, and genetic distance

17 Lyssavirus species

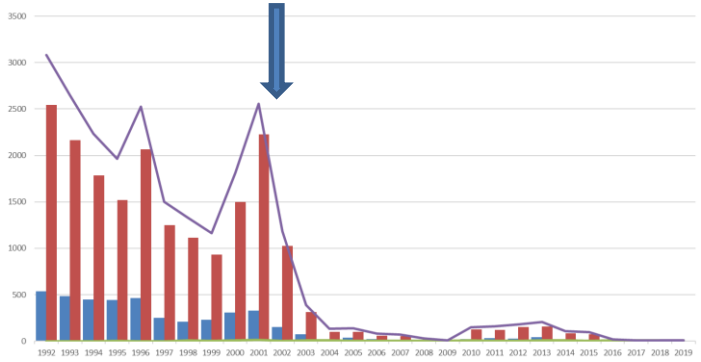
genetic distance less than 80-82% degree of nucleotide sequence identity for the N gene, or 80-81% degree of nucleotide sequence identity of the coding regions within the N+P+M+G+L genes

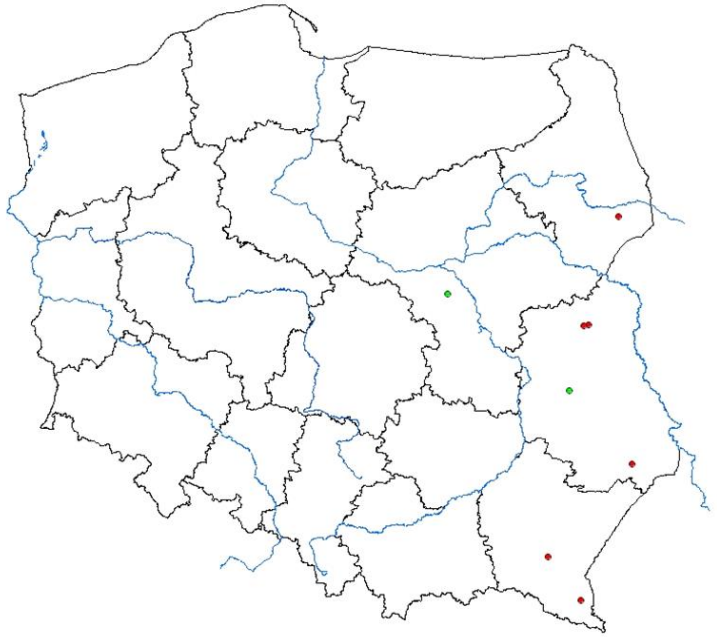
PIWet



1992

NEE, CE, EE, WE





2009

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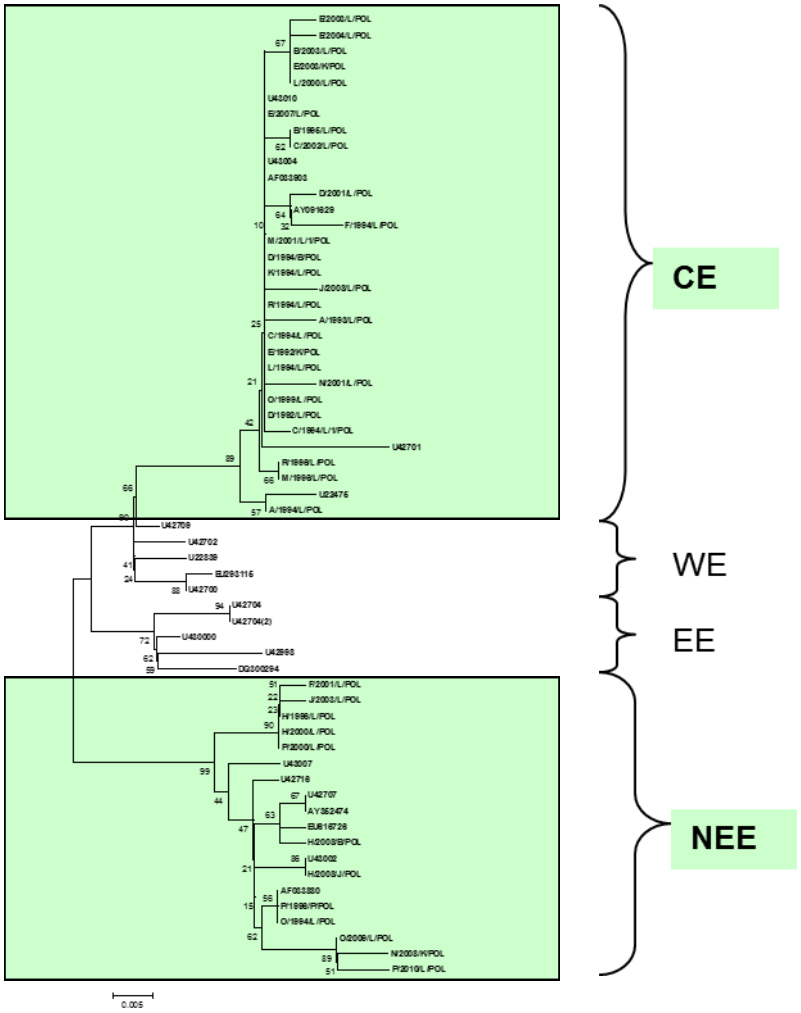
1998-2008



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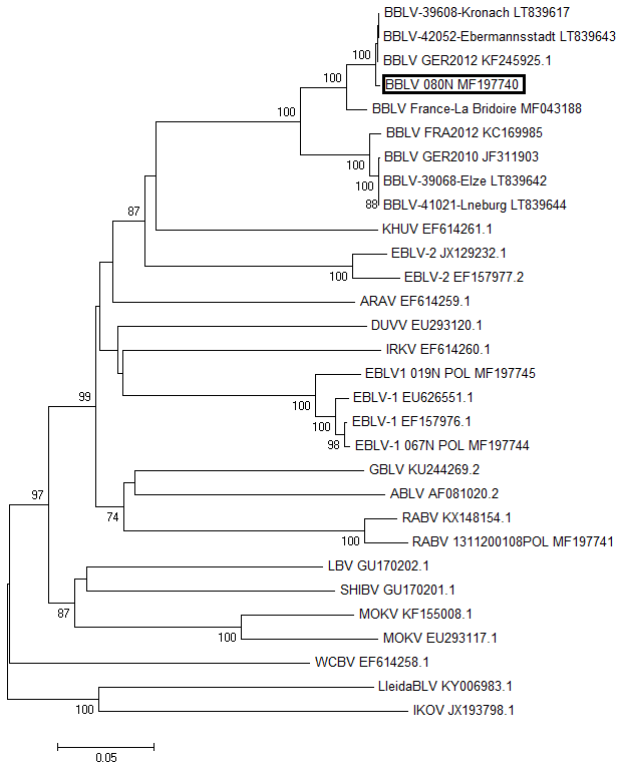
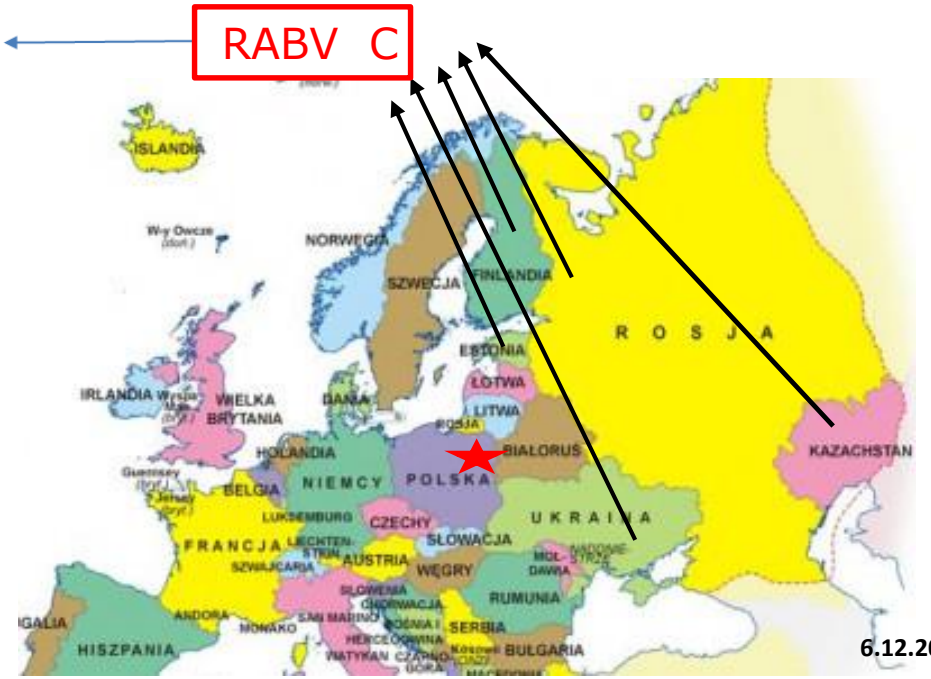
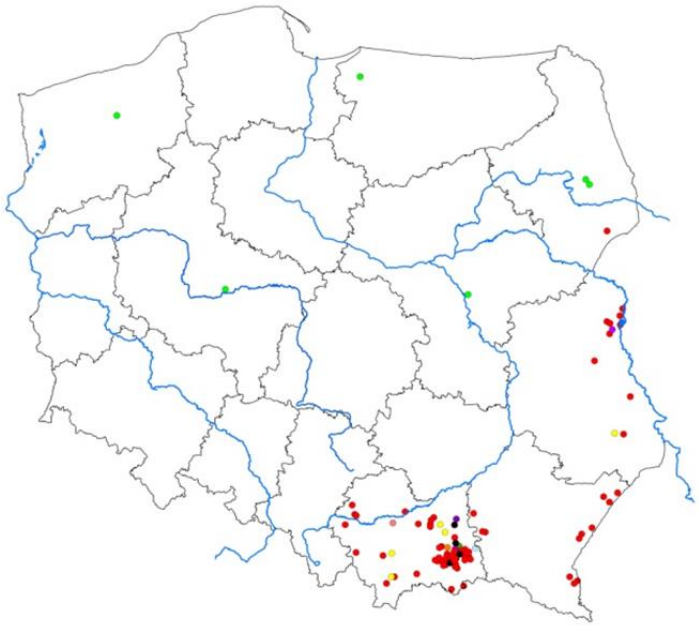


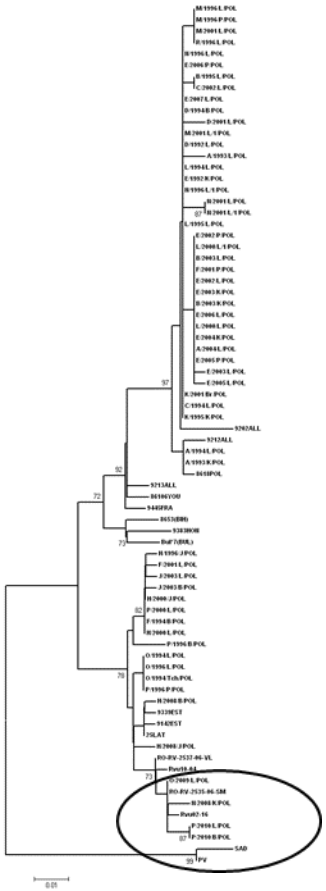
01/2008 - fox,
Podlaskie voievodeship



Małopolskie- rabies outbreak- 2010



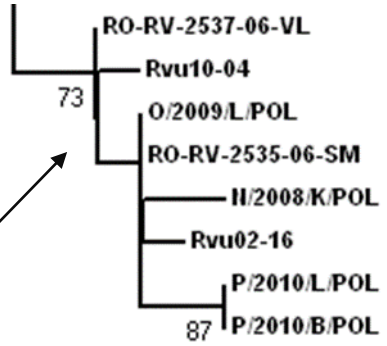
2010



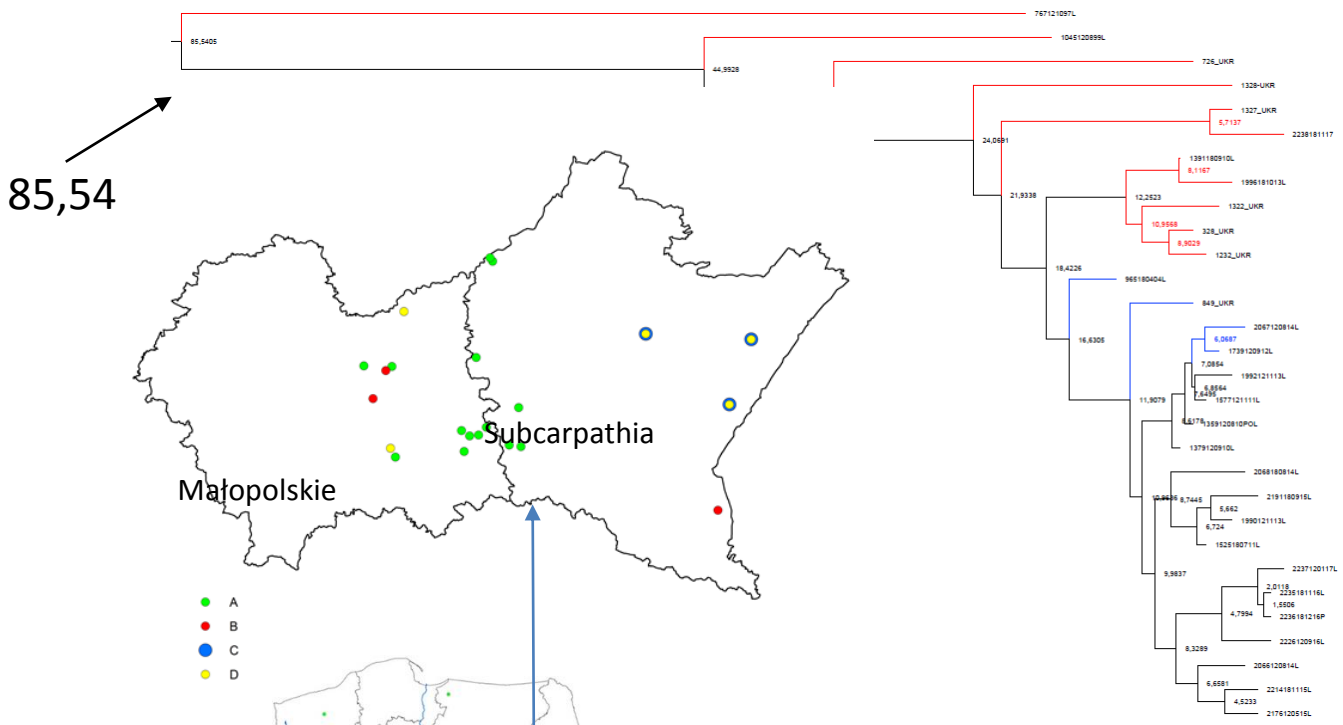
The highest homology to:

Romanian (RO-RV-2535-06-SM, RO-RV-2537-06-VL) and UKRAINIAN (Rvu02-16, Rvu10-04) RABVs, bootstrap>73

NEE

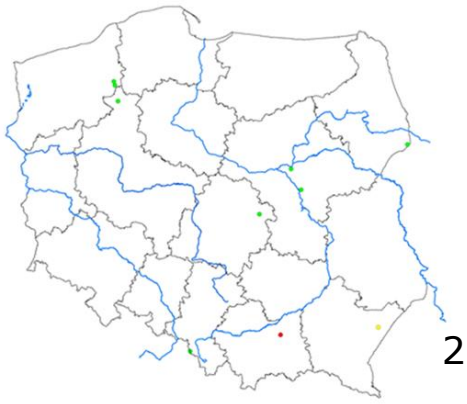


Arch Virol. 2014 Aug;159(8):2043-50. doi: 10.1007/s00705-014-2045.
Molecular epidemiology of rabies virus in Poland. Orłowska A., Żmudziński J.F.



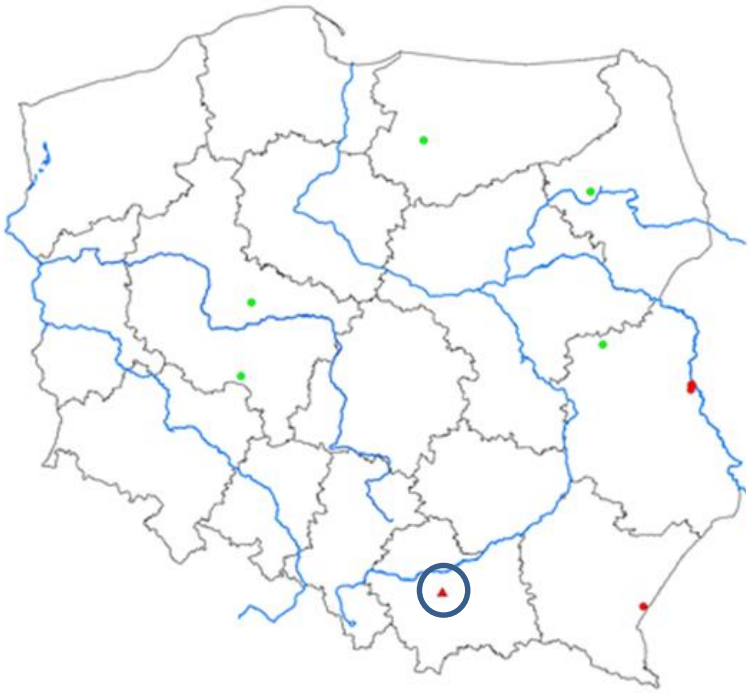
Evolution rate:
5.368*10-4

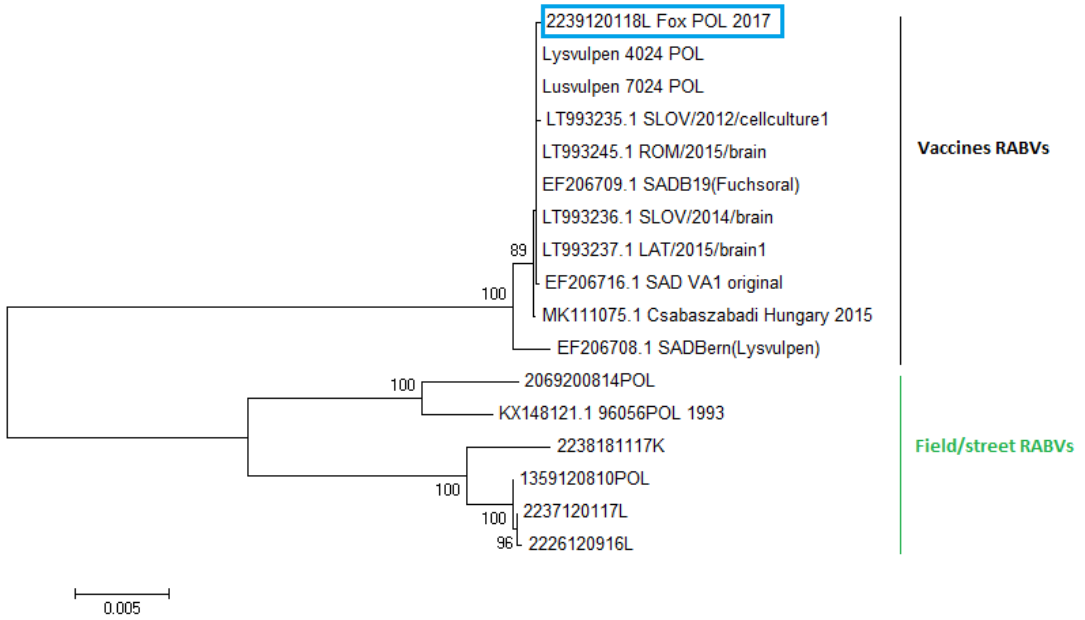
2010



2017

Vaccine-induced RABV





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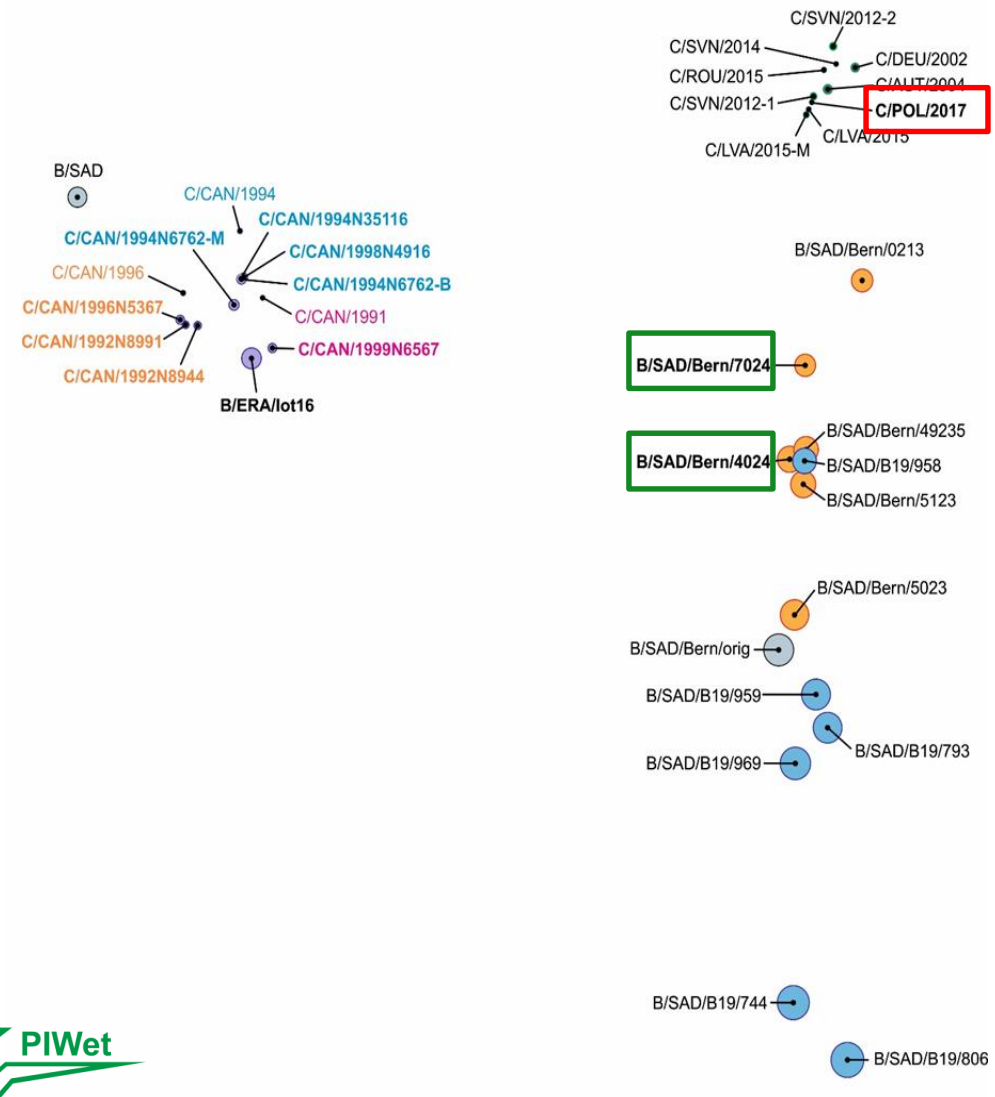
Manhattan Distance Matrix Analysis



Population-based analysis of viruses isolated from a case of rabies caused by "vaccine-derived" RABV and viruses that were included in Lysvulpen oral vaccines derived from SAD/Bern/orig showed that isolate C/POL/2017 does not directly associate with related "vaccine-derived" viruses.

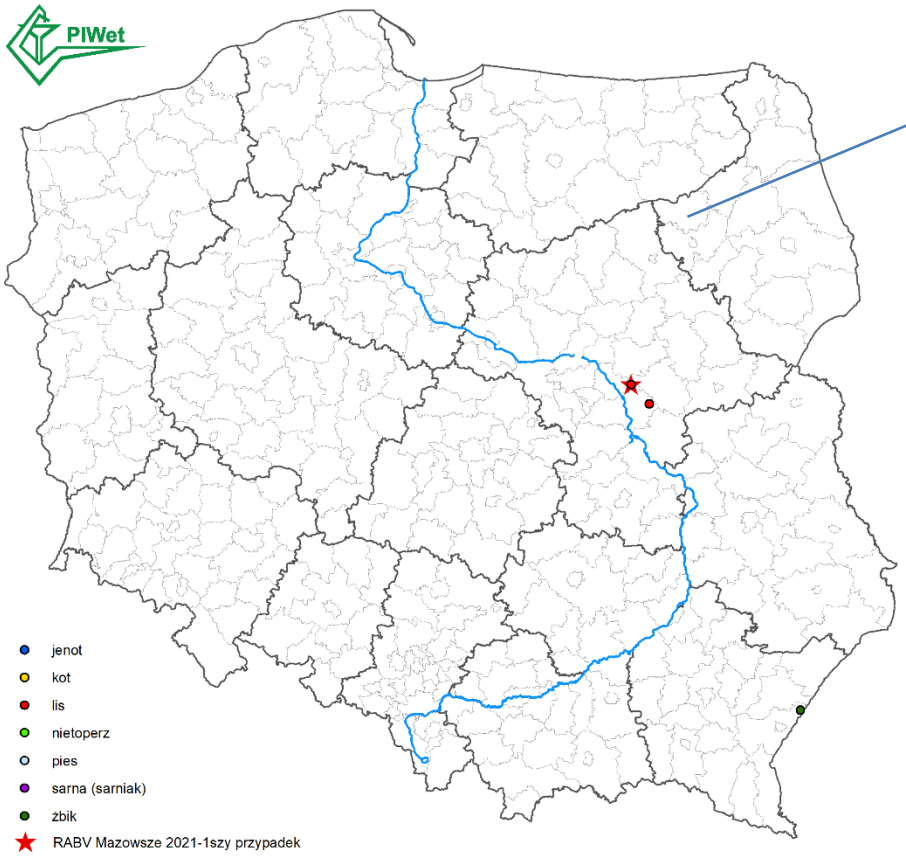
Simultaniously!!

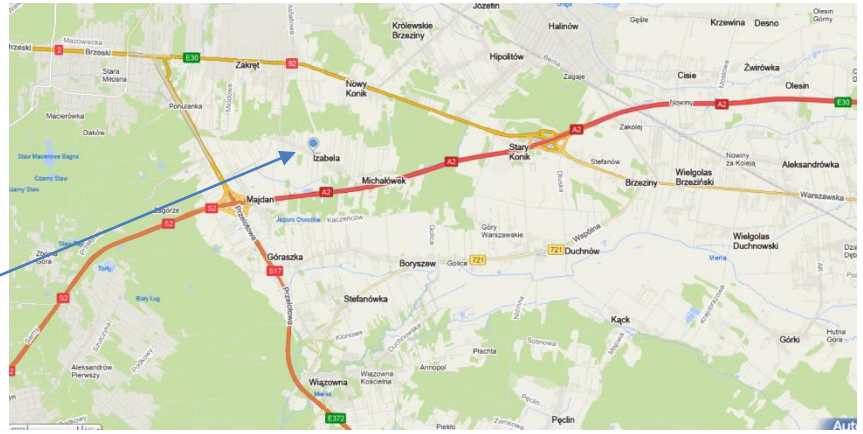
Manhattan Distance matrix analysis based on RABV field strains revealed significant genetic distance between the population of vaccine strains from both rabies cases and those contained in oral Lysvulpen vaccines, and the RABV population circulating in the field.

The virus populations are clearly separated by large distances.

PIWet

Rabies outbreak - Mazowieckie





2) osoba pobierająca próbki: [illegible]

3) miejsce, data i godzina pobrania próbek : **woj. mazowieckie, powiat otwocki, gm. Wiązowna, m. Izabela ul. Postępu 60 , 03.01.2021r. godz. 10:00**

4) miejsce znalezienia zwłok, ~~odstrzału lub odłowu zwierząt~~ : **woj. mazowieckie, powiat otwocki, gm. Wiązowna, m. Izabela ul. Postępu 60, 52.207432, 21.290071**

5) obszar objęty zakazami lub ograniczeniami określonymi zgodnie z przepisami unijnymi lub w przepisach krajowych: [6] □ tak

■ **nie**.....

2. Opis zwierząt od których pochodzą próbki: [7] załącznik do wzoru [6] □ tak ■ nie

1) gatunek/ płeć: **lis pospolity *Vulpes vulpes***

2) wiek/waga **ok. 1 rok/ 4 kg**

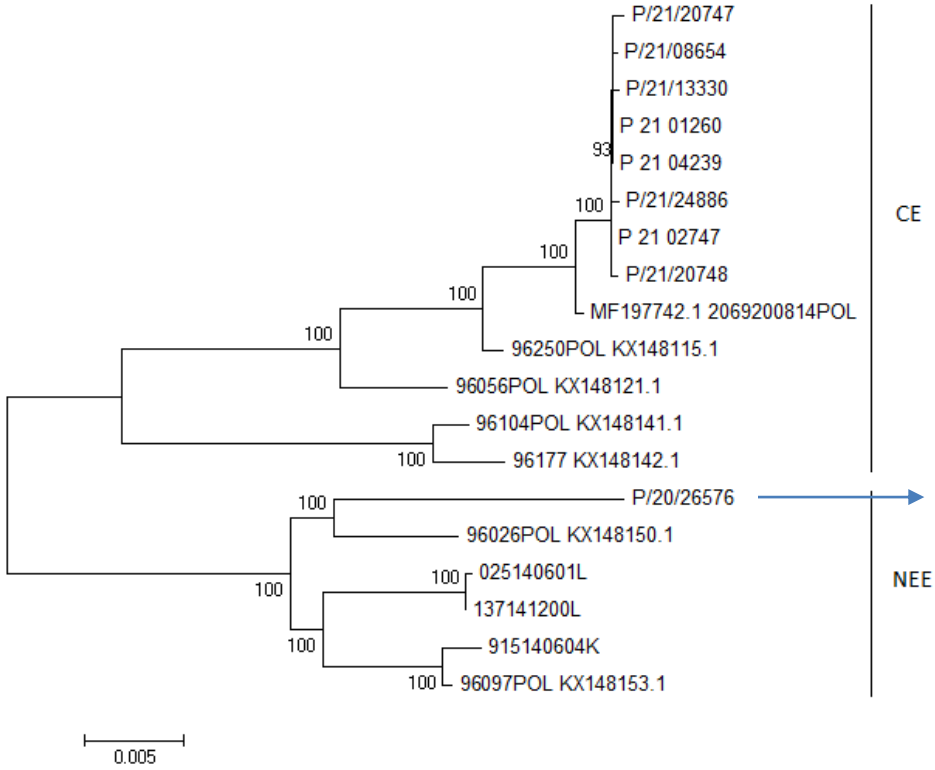
3) identyfikacja zwierząt: [8]

4) ~~próbki pobrano od zwierząt:~~ [6] □ padłych/ ~~śniętych,~~ ~~□ odstrzelonych/uśmierconych bez objawów choroby □ odstrzelonych/uśmierconych z objawami choroby □ żywych~~ ■ **zabitych w wyniku zdarzenia losowego**

5) objawy kliniczne/ zmiany anatomopatologiczne

6) data i godzina znalezienia zwłok, ~~odstrzału lub odłowu zwierząt~~ **03.01.2021, godz. 09:00**

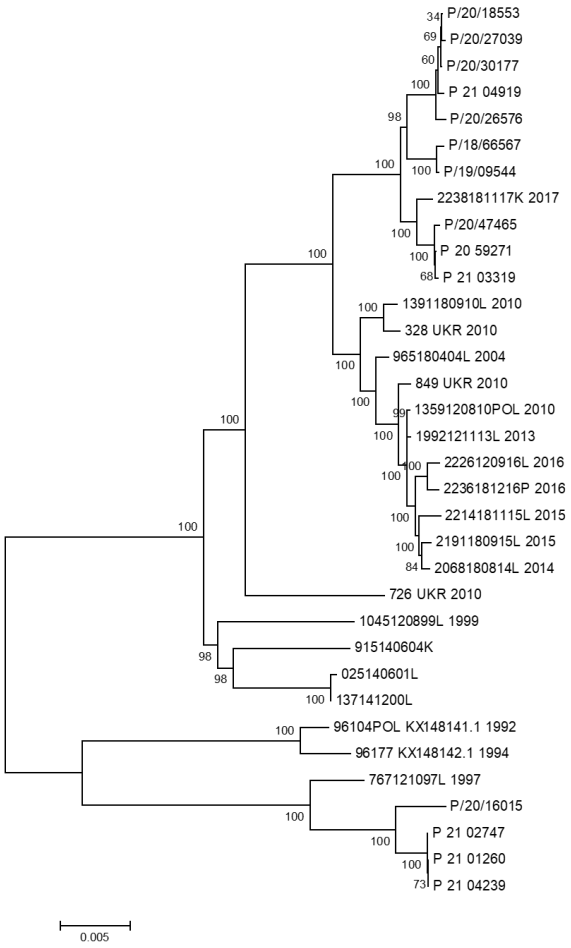
Rabies outbreak – Mazowieckie - 2021

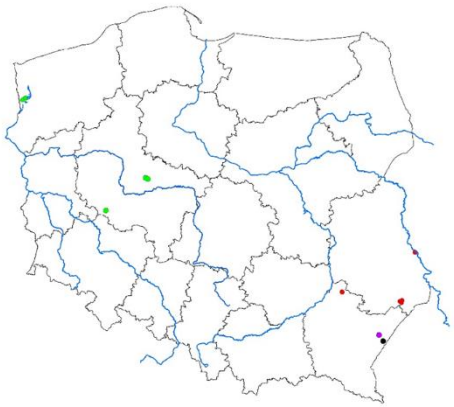


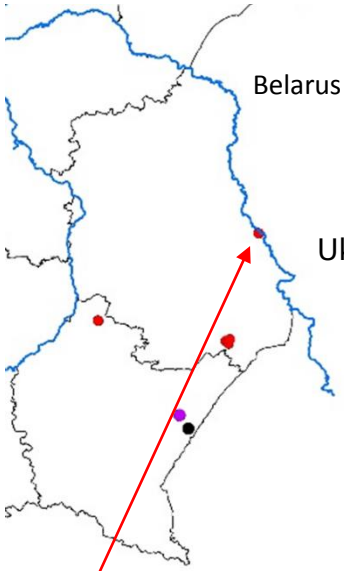
Mazovian RABV – CE

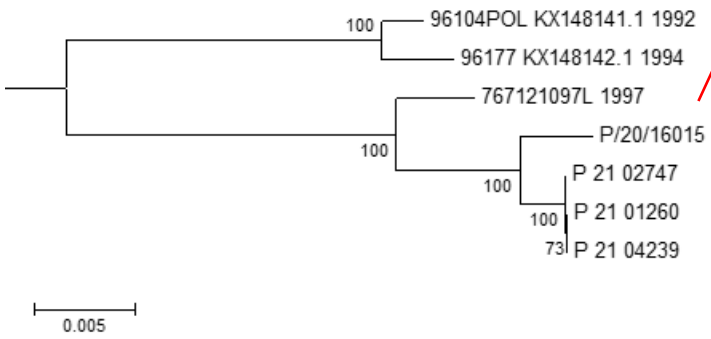
fox,
Stalowa Wola – the most closely located RABV - isolated on June 2020

Rabies outbreak – Mazowieckie - 2021





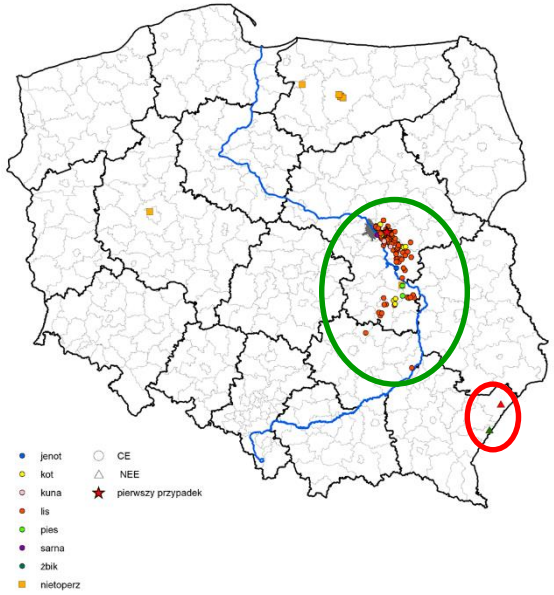




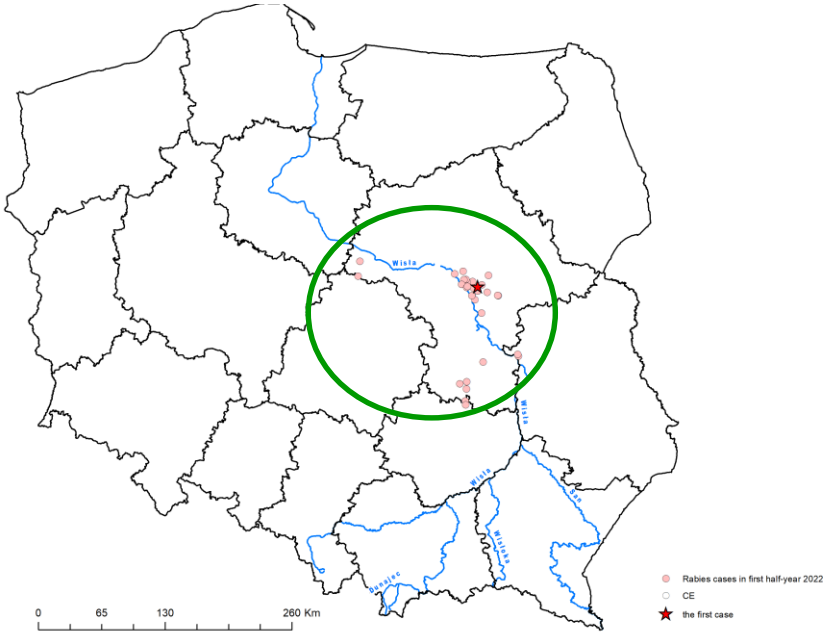
fox, 04.2020
Teosin,
Dorohusk

PIWet

2021

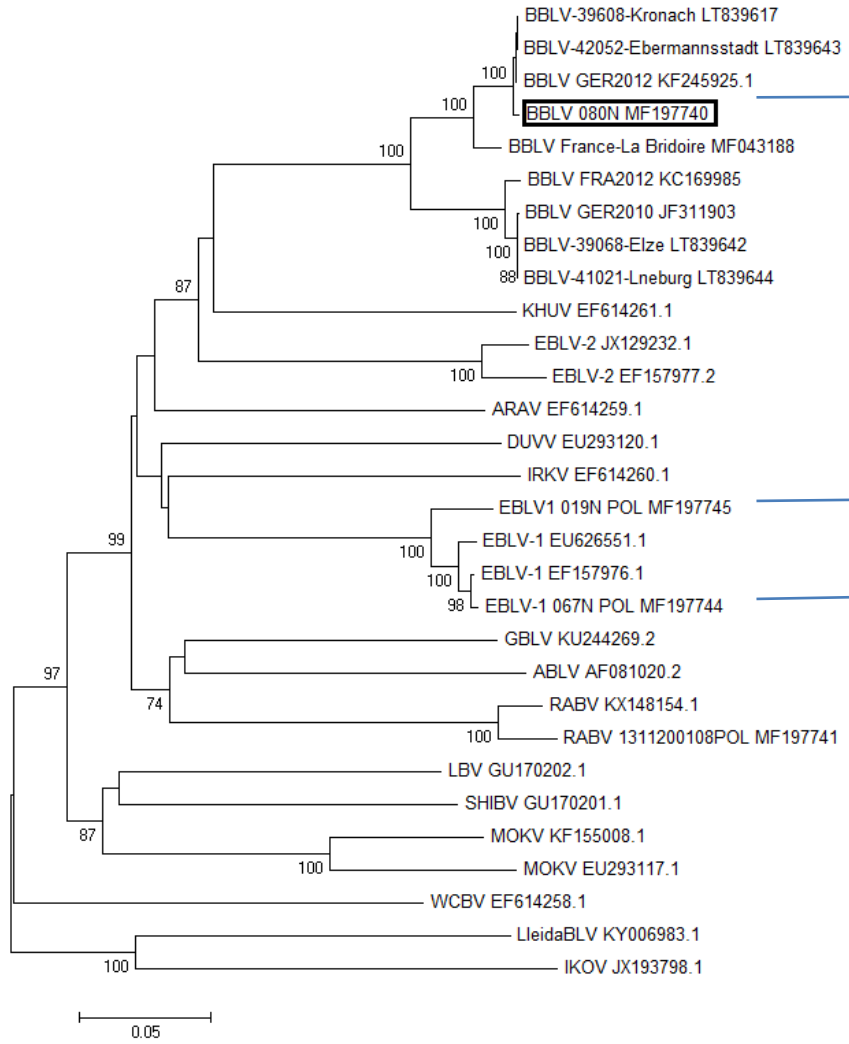


2022



All RABV collected in Mazowieckie and Świetokrzyskie voievodships – CE

Two RABVs isolated at Subcarpathia - NEE



BBLV

2016

M. nattereri

EBLV-1 b

EBLV-1 a

E. serotinus

PIWet

Thank you for attention!!