Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company’s public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
NAA was performed using the MUNANA substrate obtained from both Biosynth AG and Sigma-Aldrich companies. The NIA was conducted for both MUNANA brands to assess the susceptibilities of all IV to oseltamivir and zanamivir.

Additionally, NIA was performed for each IV strain with alternative sources of NAIs: oseltamivir – F. Hoffmann-La Roche Ltd vs. oseltamivir – Sequoia Research Products Ltd (SRP); zanamivir – GlaxoSmithKline vs. zanamivir – SRP; laninamivir – Daiichi Sankyo vs. laninamivir – SRP and peramivir – BioCryst Pharmaceuticals.

Statistical analyses were performed by one-way analysis of variance (ANOVA) followed by Tukey’s Honestly Significant Difference post-hoc test (α = 0.05) using R.

Results: No statistically significant difference was established for the IC50 means of each pair of commercially available reagents. MUNANA from both companies performed similarly in determining NA activity of the selected IV and exhibited the same profile in determining the IC50 mean values for oseltamivir and zanamivir.

IC50 values of the selected IV determined for oseltamivir, zanamivir and laninamivir exhibited the same potency for the different sources of NAIs.

Conclusions: MUNANA substrate compound and NAIs previously available from a single supplier can now be purchased from other chemical companies and at a significantly low price. Given the limited resources of research and public health funding, preference for alternative suppliers might be translated into cost savings or low bureaucratic nuisance. This strategy may maximize funding resources and allow researchers to divert more funds to targeted research goals. Laboratories are encouraged to consider these cost-efficient alternative suppliers as a reliable solution.

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Abstract no: 278
Presentation at ESCV 2016: Poster 201
Evaluation of point of care testing platform (ePlex) for respiratory viral diagnosis
Daniel Guerendiain∗, Laura MacKenzie
K.E. Templeton
NHS Lothian, Royal Infirmary of Edinburgh, UK

Background: There is an increasing demand on laboratories to deliver respiratory viral diagnosis by molecular methods. Different strategies are explored which include – point of care testing which is simple, requires minimal hands on time, is fast and can be done in ward areas and not in centralised laboratories. Tests considered need to be shown to have good performance.

GenMark Diagnostics Inc. (Carlsbad, USA) has developed a respiratory panel assay (RP) for the ePlex system detecting 26 microbes, including 22 virus and 4 (atypical) bacteria in 90 min.

The RP cartridge contains all reagents required to run the RP Panel assay. Lysis and nucleic acid extraction, PCR amplification and hybridization-based electrochemical detection occur inside the cartridge, reducing the hands-on-time to less than 1 min per sample.

The objective of this study was to compare and study the performance of the new GenMark ePlex assay against the in house real-time PCR, a lab developed test (LDT).

Material and methods: 81 nasopharyngeal swabs samples (NPS) in UTM were previously tested by an in-house Real Time PCR. Samples selected contained the following respiratory pathogens: respiratory syncytial virus, influenza A, influenza B, rhinovirus, enterovirus, bocavirus, coronaviruses, metapneumovirus, parainfluenza viruses, Bordetella pertussis and Mycoplasma pneumoniae 32.1% samples were co-infected, even with 4 different organisms.

Samples selected were less than 4 months old with only one freeze/thaw cycle. Ct values ranging from 17.11 to 40.39 mean 24.74.

200 µl of each NPS sample was added to the ePlex Sample Buffer device, transferred to the RP cartridge and then inserted on the ePlex device.

Agreement between the original LDT results and the results obtained with the ePlex assay was assessed as detected or not detected.

Additionally 5 successive 1:10 dilutions were performed for 7 different specimens: RSV, influenza A H1N1, influenza B, rhinovirus, bocavirus, Mycoplasma pneumoniae and Bordetella pertussis. Dilutions were tested on both assays to identify and compare the lower limit of detection to the LDT.

Results: Total concordance was observed in 91.73% of cases. Only 10 discrepancies were identified. 7 organisms were detected by the ePlex assay and missed by the LDT and 3 organisms were positive detected by the LDT and negative by the ePlex. Discrepancies were repeated in both assays showing same results.

Total concordance was observed in 80% of dilutions. 1 dilution 10−4 RSV sample was detected by the ePlex and resulted negative for the LDT. As well 6 samples (10−3−10−5 dilutions) were positive for the LDT and negative for the ePlex assay. B. pertussis did not detect the 2 lower dilutions as a different target gene was in use in ePlex assay.

Conclusion: The preliminary evaluation on a small sample set show a very good agreement across a range of pathogens with the GenMark compares in house real-time PCR. The assay was also found to be very simple and easy to perform and would be suitable for a hospital ward or outpatient environment.

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Single genetic clades of EV-D68 strains in 2010, 2013, and 2015 in Osaka City, Japan
A. Kaida1∗, N. Iritani1, S.P. Yamamoto1, D. Kanbayashi1, Y. Hirai1, U. Kohdera2, M. Togawa3, K. Amo3, M. Shiomi4, T. Nishigaki5, T. Kageyama6, H. Kubo1
1 Osaka City Institute of Public Health and Environmental Sciences, Japan
2 Nakano Children’s Hospital, Japan
3 Osaka City General Hospital, Japan
4 Aizenbashi Hospital, Japan
5 Osaka Police Hospital, Japan
6 Influenza Virus Research Center, National Institute of Infectious Diseases, Japan

Background: Detection of Enterovirus D68 (EV-D68), a cause of acute respiratory tract infection (ARTI), was rarely reported before the early 2000s. Molecular analyses have demonstrated that recently detected EV-D68 strains are of three major genetic clades. We previously reported the emergence of EV-D68 in children with ARTI in Osaka City, Japan in 2010.

Objectives: This study surveyed EV-D68 among children with ARTI since its first endemic period in 2010 and conducted molecular analyses of the detected viral genome sequences.

Methods: During November 2010–December 2015, 2215 respiratory clinical specimens were obtained from children (<10 years old) with ARTI. Specimens from patients diagnosed with influenza were excluded. Real-time RT-PCR was used to detect enteroviruses. Viral protein 4 (VP4) or VP1 genes were sequenced to identify EV-