A note from the WHO CC for Reference and Research on Influenza; Melbourne 4 April 2022 (http://www.influenzacentre.org/)

Selecting the right transport medium for influenza virus isolation

Since the beginning of the SARS-CoV-2 pandemic in 2020, many laboratories worldwide have seen a dramatic increase in the number of clinical samples sent to them for viral respiratory diagnostic testing. Most commonly, nasopharyngeal swabs (NPH) and throat swabs are collected for the diagnosis of respiratory viral infections. There are many different types of swabs available commercially, some of which contain their own transport medium (or media), including:

- viral transport medium (VTM)
- universal transport medium (UTM)
- molecular transport medium (inactivated)

Alternatively, some laboratories may choose to make their own transport medium to save on costs. Some common in-house media types are:

- Hank's balanced salt solution
- Cell culture medium
- Tryptose-phosphate broth
- Veal infusion broth

The type of swab chosen for specimen collection and storage is reflective of individual laboratory or country requirements. In particular, there has been an increase in the use of molecular transport media containing ingredients designed to inactivate and preserve viral and bacterial pathogens, as it eliminates the need for cold chain sample collection and transportation, and removes the need to work with live virus. These molecular transport media while being very well suited for molecular testing such as real time PCR, they inactivate viruses and bacteria making it impossible to generate isolates from these samples.

So just as a reminder when collecting respiratory samples that might be influenza positive for the WHO CC, our preference is for samples NOT to be collected in molecular testing media (see below for details on some of these media, Figure 1) as we routinely try and isolate influenza viruses from influenza positive clinical samples that you kindly send us, for a detailed analysis of their antigenic properties (as well as their genetic properties). A list of transport media that CAN be used that are suitable for virus isolation are also listed below (Figure 2)

A final request is to NOT to send us influenza positive samples that also test positive for SARS-CoV-2 unless this is specifically requested or previously arranged with the WHO CC. This is because seasonal influenza is handled at BSL2 containment level while at the moment SARS-CoV-2 culture must be handled at BSL3 containment level.

Thank you for your continued support of the WHO GISRS program and for sending us your influenza positive samples/isolates, these help us better understand the transmission and evolution of influenza and aid in the selection of vaccine candidates for influenza vaccine programs. Please feel free to contact either myself or Heidi Peck on the email addresses below for further information.

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Figure 1. Common molecular transport medium that INACTIVATE viruses

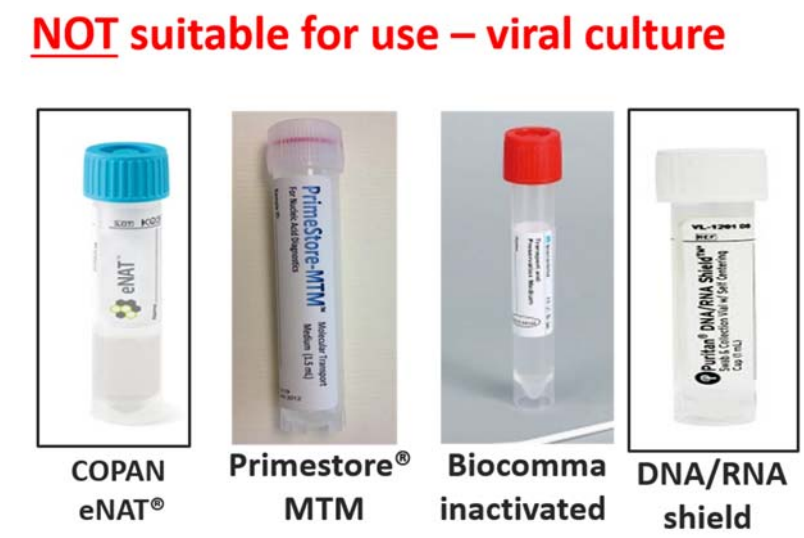

Figure 2. Common virus transport medium that DO NOT inactivate viruses