Copan eNAT™ Medium Stabilize Nucleic Acids for the Detection of Virus with the xTAG Respiratory Viruses Panel

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ECCMID April 9 – 12 2016 Amsterdam
Poster P0119

INTRODUCTION:

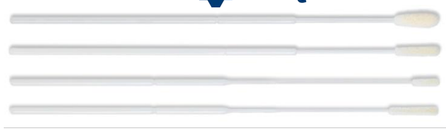
Clinical specimens for the detection of viruses and bacteria tested with amplification assays were traditionally collected in viral or bacterial culture transport media. Copan developed the eNAT™ , a molecular medium designed to inactivate pathogens viability and preserve both DNA and RNA nucleic acids at room temperature for extended period of time. eNAT™ mdium can be used for the collection and transportation of clinical samples for detection of infectious agents with nucleic acid amplification assay. eNAT™ is available in tubes with 1.0 and 2 ml, with or without FLOQSwabs™ (Copa Italia) for specific sample collection sites.

OBJECTIVES:

The objective of this study was to validate the performance of the eNAT™ medium associated with FLOQSwabs™ for the stability of nucleic acids for the detection of respiratory viruses with the Luminex xTAG Respiratory Viruses Panel (RVP).

MATERIALS:

12x80 tube with
1.0 ml medium
2.0 ml medium

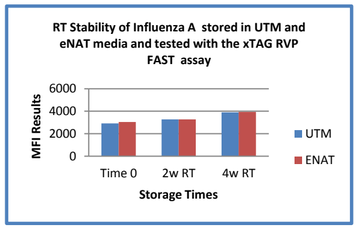


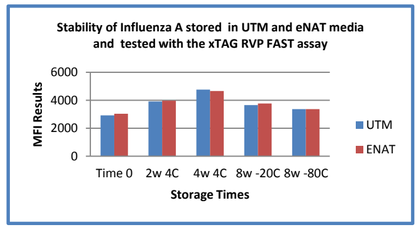
eNAT™ is available in kits with different FLOQSwabs™

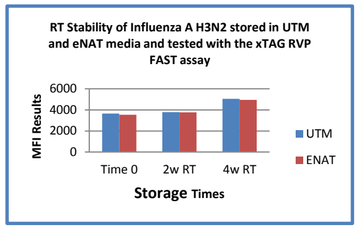
METHODS:

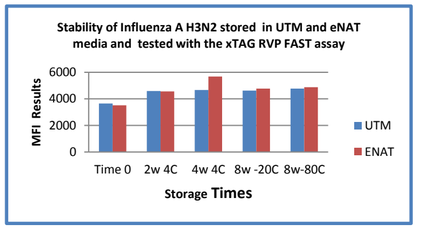
Two viral pools, prepared with clinical strains of viral isolates, were titrated in UTM ™ (Copan Italia) and in eNAT ™ media. The optimal dilution of both viral pools was used to inoculate both media. The first pool included influenza A (H3N2), influenza B, and respiratory syncytial virus type B, the second pool included adenovirus, human metapneumovirus and parainfluenza type 2.
Aliquots of 100µl of each pool and a FLOQSwabs™ were added to sets of 1ml UTM ™, and to sets of 1ml eNAT ™ media tubes, and tested at time zero, after 2 and 4 weeks at 4^0C and room temperature, and 8 week at -20^0C and -80^0C.
At each testing time, 200µl of both UTM ™ and eNAT ™ inoculated samples was used to extract nucleic acid on the EasyMAG (Biomerieux).
Five microliters of extracted nucleic acids from each sample were added to the RVP-1 master mix and tested on RVP-1 assay.

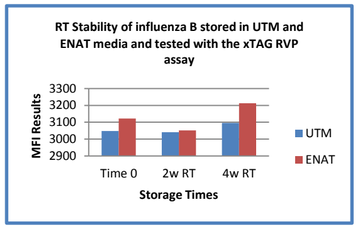
RESULTS

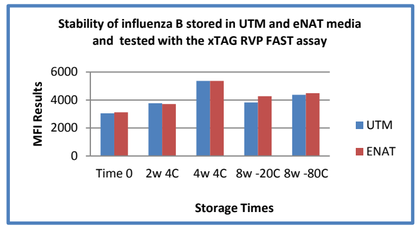


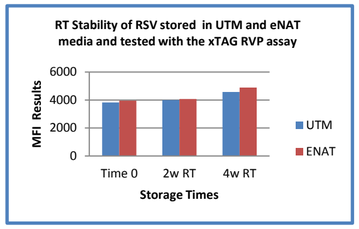


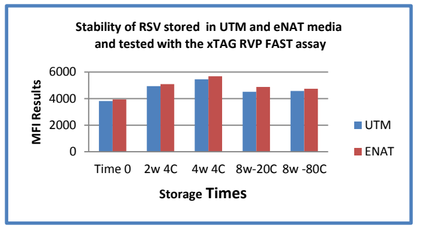


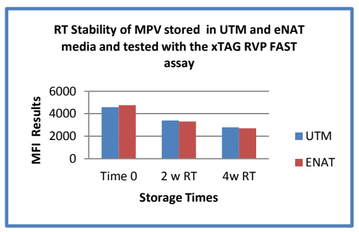


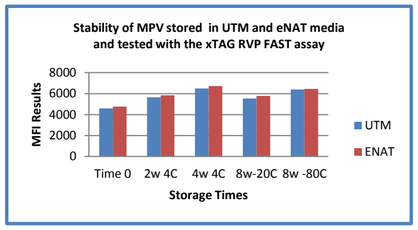


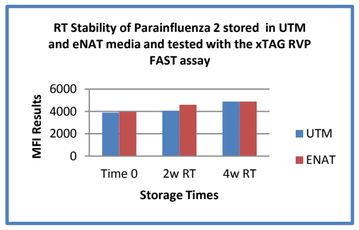


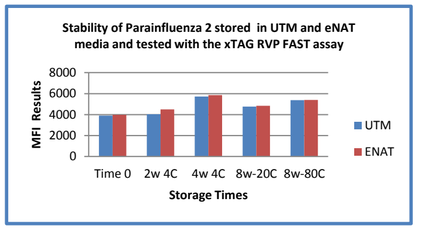


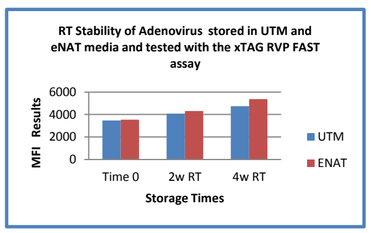








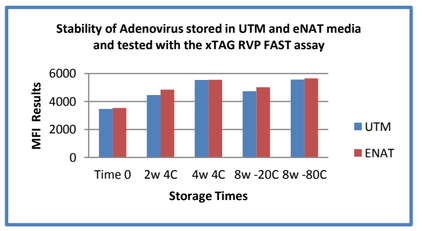




RESULTS:

All respiratory viruses (Influenza A (H3N2), influenza B, and respiratory syncytial virus B, adenovirus, human metapneumovirus and parainfluenza types 2) were detected in eNAT™ and UTM™ media at all times and conditions.

Results show good stabilization of viral RNA and DNA nucleic acids in eNAT™ medium as in UTM™ medium, at all testing times and temperatures.



CONCLUSIONS:

Copan eNAT can be used for collection and long term storage of clinical specimens for the detection of respiratory viruses with the xTAG RVP FAST assay.

eNAT medium viability inactivation capability is optimal for the collection of specimens from patients with high risk infectious pathogens.

ENAT can be used to collect and store sample from patients with a travel history from country with endemic MERS or Ebola outbreaks.

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