

Connecting Scientific Research to Patient Care

Vanessa Rivera-Amill, PhD Scientific Director



PONCE HEALTH SCIENCES UNIVERSITY

PONCE RESEARCH INSTITUTE





Mission

To become the service model in high complexity diagnostic tests for Puerto Rico and the Caribbean.

Vision

To increase the spectrum, coverage, and overall efficiency of clinical referral services for our local community as well as the Caribbean region.



History of INNO Diagnostics Reference Laboratory (Immunology Reference Laboratory)



1991

AIDS Research Infrastructure Program founded by Yasuhiro Yamamura

In response to the emerging epidemic of HIV/AIDS among ethnic minorities

1991 Fully licensed clinical reference laboratory was established

Fully certified

PR Dept. of Health

CLIA

WHO HIV ResNet Accreditation for HIV genotyping 2019 Changed name to INNO DIAGNOSTICS (under the umbrella of Ponce Research Institute, a 501 c.3 non-profit entity)





- Centrally located on the campus of Ponce Health Sciences University in Ponce (southcentral PR)
- CLIA certified specialty areas:
 - Hematology
 - Immunology
 - Virology





Leadership

Vanessa Rivera-Amill, PhD

Scientific Director

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Gerardo Hernández-Buitrago, PhD

Laboratory Director

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Iván Meléndez, MD

Clinical Consultant

Centro Ararat, Director

Kenira Thompson, Ph.D.

President, Ponce Research Institute kthompson@psm.edu

Fully certified staff trained in high complexity diagnostic analysis





Capacity and Reach



- Current number of samples processed
- Types of testing
- Geographical reach



Capacity and Reach



nno

iagnostics

Ongoing projects

- Molecular epidemiology of HIV migration
- Feasibility of implementing NGS-based genotyping
- Training and implementation of "In House" genotyping



Examples of studies for which we have provided support

- Detection of post-hurricane leptospirosis cases through enhanced surveillance for acute febrile illness in southern Puerto Rico
- Dengue virus immunity in endemic and non-endemic human cohorts
- Clinical and Neurodevelopmental Outcomes of Postnatally acquired Zika Virus Infection among Children Aged <5 years
- Effects of Prefrontal Microglia Activation on PTSD-like Behaviors
- Targeting the Brain-Gut-Flora Axis using Probiotics in Endometriosis
- Zika virus sero-prevalence and assessment of the Dual Path Platform[®] Zika IgM assay to detect recent or current Zika virus infection



Capacity building for SARS-CoV-2 diagnostic test implementation

Inno Diagnostics Needs

- Committed to furthering programs to enhance our capacity to strengthen detection and response to arboviral infections
- ➢ Our lab is accredited by WHO
 - Other infrastructure requirements
- Focus on emergent technologies: associated costs
- Be sustainable over periods of relative inactivity

Puerto Rico Needs

- Establishment of laboratory networks technical assistance through cooperation between laboratories
- Awareness of existing laboratory capacity and personnel
- Utilize laboratories and faculty in academic settings
- Protection of their scientific contribution





Sample collection began on March 20, 2020



PRUEBAS DE CORONAVIRUS



Los residentes de Ponce podrán hacerse la prueba de manera gratuita. Deberán presentar evidencia.



IMPORTANTE

Debe haberse hecho las pruebas de influenza y Mycoplasma.



DEBE LLAMAR

Es por cita previa y con referido médico llamando al Call Center 787-580-0222 de 8:00 a.m. a 4:30 p.m.



HORARIO

Las pruebas serán tomadas en la modalidad de servi-carro de lunes a viernes de **7:30 a.m.** a **3:00 p.m.**



PROCEDIMIENTO

 Se le tomarán los datos por teléfono antes de pasar al área designada.
Se le realizará la prueba sin bajarse del auto.

#QuédateEnTuCasa por tu bien y el de los tuyos INNO DIAGNOSTIC REFERENCE LAB 388 Calle Luis F. Sala Ponce, PR 00732

¡ESTAMOS CONTIGO!

Si tienes preguntas sobre el COVID - 19 o necesitas apoyo emocional queremos que sepas que cuentas con un grupo de profesionales dispuestos a ayudarte.

QUÉDATE EN TU CASA

ILLÁMANOS!

843-7128

LUNES A VIERNES 9:00 AM A 5:00 PM

¡TE QUEREMOS SALUDABLE!



Addressing SARS-CoV-2 sample collection: Viral Transport Medium

- Centers for Disease Control and Prevention (SOP#: DSR-052-01)
- Reagents
 - Fetal Bovine Serum (FBS)
 - Hanks Balanced Salt Solution (HBSS) 1X with calcium and magnesium ions, no phenol red, 500 mL bottle
 - Sterile, heat-inactivated fetal bovine serum (FBS)
 - Gentamicin sulfate (50 mg/mL)
 - Amphotericin B (250 μg/mL)
- References:
 - Leland, D.S. 1992. Concepts of clinical diagnostic virology, p. 3-43, In E.H. Lennette (ed.), Laboratory Diagnosis of Viral Infections, Second Edition. Marcel Dekker, Inc., New York.
 - Johnson, F.B. 1990. Transport of Viral Specimens. Clinical Microbiology Reviews 3(2):120-131.
 - Biosafety in Microbiological and Biomedical Laboratories (BMBL), current edition.





Lab-developed SARS-CoV-2 Real-time RT-PCR

- Intended for the qualitative detection of nucleic acid from the SARS-CoV-2 in respiratory specimens
 - Nasopharyngeal swabs, oropharyngeal swabs; other specimens may be appropriate.
- Limited to Inno Diagnostics (Laboratorio de Referencia en Inmunología, Lic. 819).
- The test utilizes the CDC-developed assay that targets the Nucleocapsid gene of this virus.
- Instruments used with the test: Qiagen Viral RNA kit and Roche LightCycler 480 I, Roche LightCycler 480 II and Bio-Rad CFX96.





Lab-developed: SARS-CoV-2 RT-PCR and Sequencing

- Intended for the qualitative detection of nucleic acid from the SARS-CoV-2 in respiratory specimens
 - Nasopharyngeal swabs, oropharyngeal swabs; other specimens may be appropriate.
- Limited to Inno Diagnostics (Laboratorio de Referencia en Inmunología, Lic. 819).
- The test utilizes the PCR and sequencing primers used in Naganori Nao, et al. Detection of second case of 2019-nCoV infection in Japan, January 30, 2020.





Instruments used with the test

- Qiagen Viral RNA kit, One Step RT-PCR kit (Qiagen), Roche FastStart PCR master (Roche), BigDye Terminator v3.1 Cycle sequencing kit (LifeTechnologies).
- Thermocyclers: PE Applied Biosystem GeneAmp PCR System 9700, PE Applied Biosystem GeneAmp fast PCR System 9800, Veritti 96 well thermal cycler or Veritti 96 well fast thermal cycler.
- DNA analyzer: 3730/3730XL





Flow Cytometry



FACSCalibur: use of multiple fluorochromes (FITC/PE/PerCP/APC) to effectively identify and isolate subset populations in a single sample.

BD FACSAria I: Cell Sorter: Enables multicolor analysis of up to 10 fluorescents markers and two scatter parameters at the same time. We have the capacity to separate 4 subsets of cells at the same time. **BD FACSMelody** cell sorter combines proven and exclusive BD technology of high-end sorters with new automation and simplified software.





The MiSeq System: Next-Generation Sequencing



 Base calls are made directly from signal intensity measurements during each cycle, greatly reducing raw error rates compared to other technologies.





Luminex MAGPIX



 The Luminex MAGPIX analyzer detects up to 50 analytes per sample and reads a 96-well-plate in just 60 minutes. The procedure could be performed by using as little as 25µl of samples.







R 572 PATIENT **SAMPLES COLLECTED**

March 20,2020-present

FULLY CERTIFIED STAFF

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15

CALL CENTER VOLUNTEERS-FACULTY STUDENTS STAFF

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25 +



CURRENT PROTOCOLS IN PROCESS TO EXPEDITE COVID-19 TESTING

ONE DAY AT A TIME.

every day

HOPING

FOR A BETTER TOMORROW

Thank you!

Bringing together experts to help expedite diagnosis, treatment, and prevention of diseases.

For more information: (787) 840-2575 Ext. 2178 | (787) 841-5150 e-mails: karroyo@psm.edu gehernandez@psm.edu vrivera@psm.edu

