

# Monkeypox in Spain

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CIBERINFEC  
ISCI III*

# ciberinfec isciiii Diagnostic and Reference. Monitoring, alert and response

## Arbovirus and Imported Viral diseases Unit

24 h/7 days per week: Rapid  
Response Unit



### DATOS DE LA ACTIVIDAD

|                                |   |              |   |
|--------------------------------|---|--------------|---|
| <input type="checkbox"/> Nueva | <input checked="" type="checkbox"/> Ya autorizada. Nº:                            |              |   |
| Responsable:                   | MªPaz Sánchez-Seco/Anabel Negrodo   | E-mail:      | paz.sanchez@isci.es   |
| Unidad:                        | Arbovirus y Enfermedades Viricas Importadas                                       | Tfo. (ext.): | 23632   |
| Tipo actividad:                | <input checked="" type="checkbox"/> Ensayo <input type="checkbox"/> Otros:        |              |   |
| Nombre / Descripción:          | Inactivación de muestras de garrapatas para la detección de virus de Crimea Congo |              |   |
| Uso P3                         | Frecuencia:   | Esporádica   | Duración: Desde a <input checked="" type="checkbox"/> Indefinidamente |

# Detection and identification of orthopoxviruses using a generic nested PCR followed by sequencing

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## ABSTRACT

Some orthopoxviruses are considered to be potential pathogens. After the smallpox eradication routine vaccination was stopped around 1975, a significant portion of the population is now completely unprotected from infection by orthopoxviruses. Some of the orthopoxviruses related with non-variola infections can be highly pathogenic, causing alert and panic situations.

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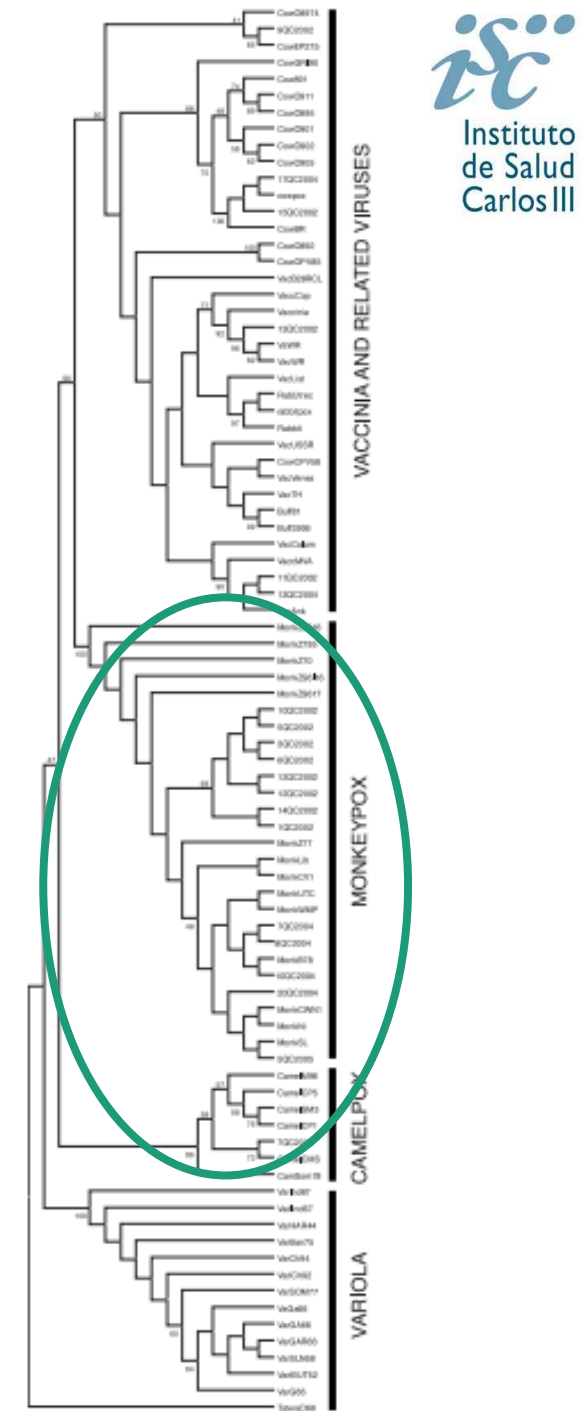
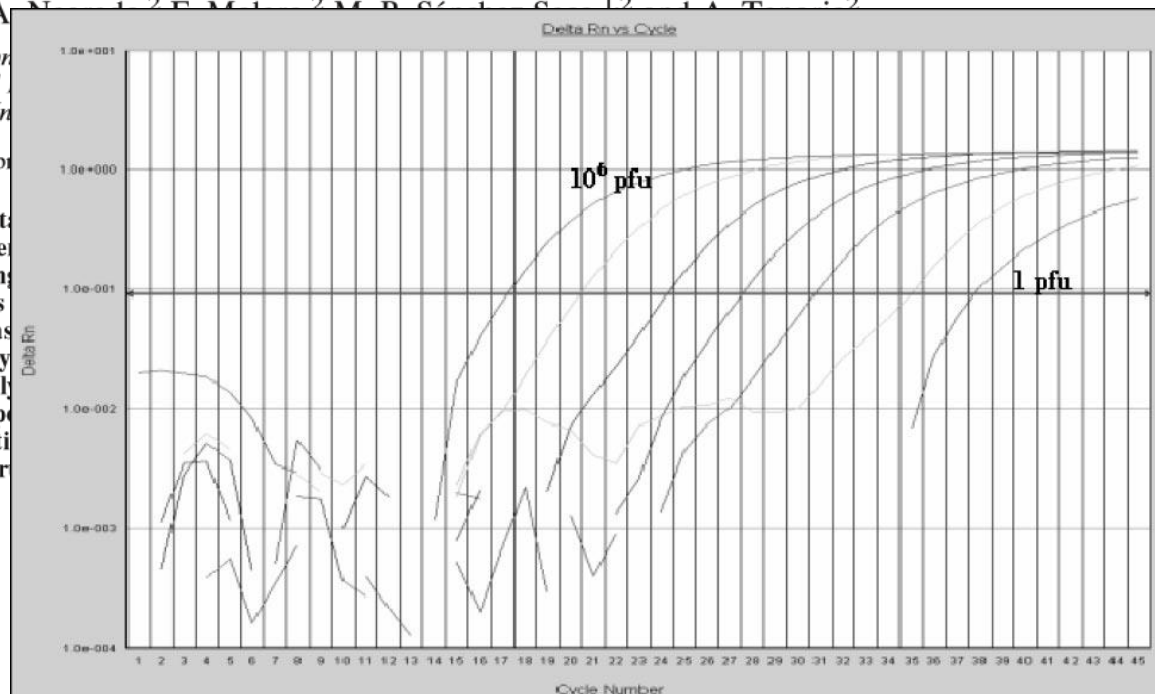
## Use of Internally Controlled Real-Time Genome Amplification for Detection of Variola Virus and Other Orthopoxviruses Infecting Humans<sup>∇</sup>

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Smallpox, once a devastating disease, was eradicated in 1980. However, in recent years, particularly following the bioterrorism attacks, the most significant agents of concern are the orthopoxviruses. The assay described here is a controlled real-time PCR as a method for the detection of orthopoxviruses. The assay primers, designed in highly conserved regions, are designed to identify orthopoxviruses. The assay is rapid, sensitive, and specific for the identification of variola virus.



# External Quality assays

- 2002 European Network for Diagnostic of Imported Viral Diseases (ENIVD)
- 2004 ENIVD
- 2018 Emerge (Robert Koch)
- 2019 Emerging Virus Diseases Laboratory Network (EVDLabNet, ECDC)
- 2019 Refbio (Robert Koch)

May 17th: first communication; 7 possible cases

May 18th: arrival of samples

**Vesicular fluids**, serum, urine, nasopharyngeal  
exudate

May 18th: results: all positive

May 18th: first draft for national surveillance protocol

May 19th: Sequences (400 bp) available: MPXV Western  
African clade

May 25th: complete genome sequences: analysis  
ongoing.



# PROTOCOLO PARA LA DETECCIÓN PRECOZ Y MANEJO DE CASOS ANTE LA ALERTA DE VIRUELA DE LOS MONOS (MONKEYPOX) EN ESPAÑA

Actualizado a 31 de mayo de 2022

## Clinical criteria:

A person with a clinical picture highly suggestive of monkeypox infection (MPX)\* in which they have been ruled out or the differential diagnosis indicates that there is very low suspicion of other pathologies.

\*Vesicular or pustular rash (especially if it is umbilicated) in any part of the body with one more of the following: fever ( $>38.5^{\circ}\text{C}$ ), severe headache, myalgia, arthralgia, back pain, lymphadenopathy.

## 2.1. Criterios para la clasificación de casos

### Criterio clínico:

Una persona con un cuadro clínico altamente sugestivo de infección por monkeypox (MPX)\* en la que se han descartado o el diagnóstico diferencial indica que hay muy baja sospecha de otras patologías.

*\*Exantema vesicular o pustular (especialmente si es umbilicado) en cualquier parte del cuerpo con uno más de los siguientes: fiebre ( $>38.5^{\circ}\text{C}$ ), dolor de cabeza intenso, mialgia, artralgia, dolor de espalda, linfadenopatía.*

### Criterio epidemiológico:

Si en los 21 días antes del inicio de síntomas cumple uno de los siguientes:

- Ha tenido un contacto estrecho con un caso confirmado o probable de MPX
- Ha mantenido relaciones en contextos sexuales de riesgo
- Tiene historia de viaje a zonas endémicas de África occidental o central en los que se ha identificado circulación del virus.

### Criterio de laboratorio:

Detección de genoma de virus MPX (MPXV) mediante PCR específica o genérica para Orthopoxvirus en muestra clínica

## 2.2 Clasificación de casos

- **Caso sospechoso:** cumple el criterio clínico
- **Caso probable:** cumple criterio clínico y criterio epidemiológico
- **Caso confirmado:** cumple criterio de laboratorio
- **Caso descartado:** casos sospechosos o probables en los que el resultado de laboratorio ha sido negativo

## Epidemiological criteria:

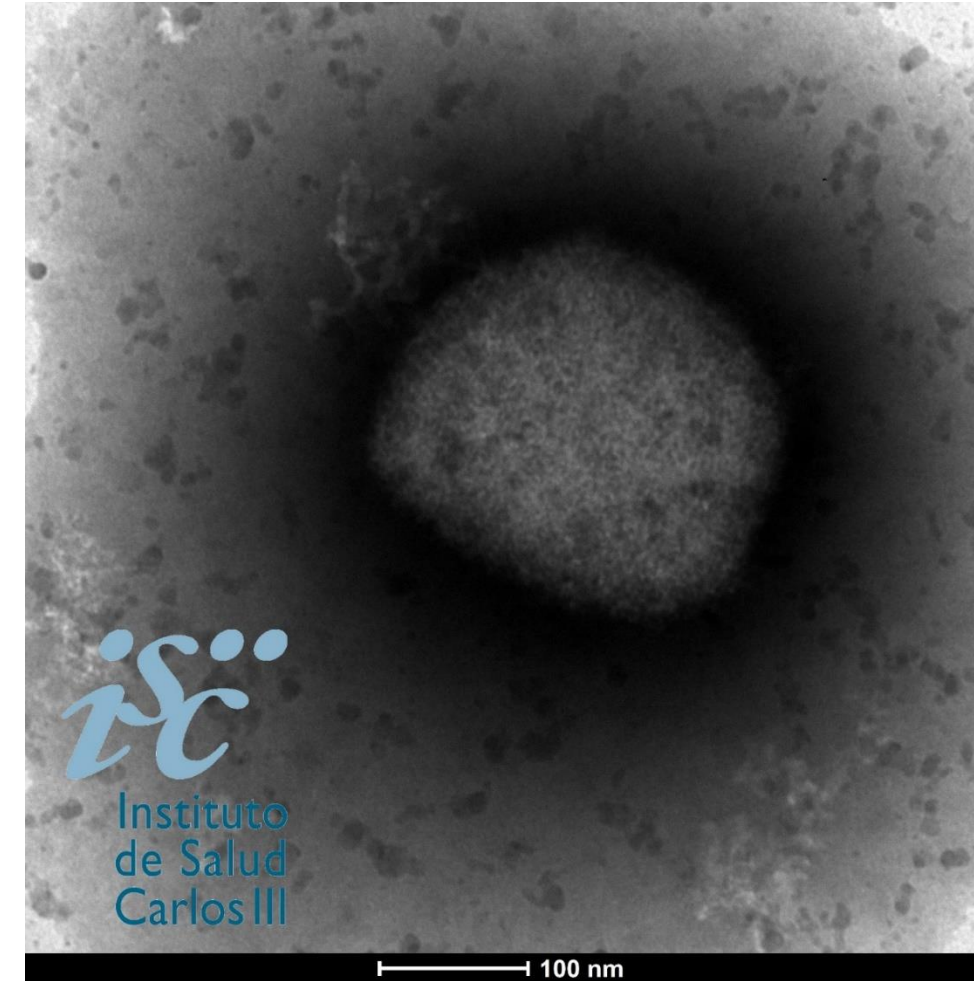
If in the 21 days before the onset of symptoms you meet one of the following:

- Have had close contact with a confirmed or probable case of MPX
- Has had sex in risky sexual contexts
- Has a history of travel to endemic areas of West or Central Africa where circulation of the virus has been identified.

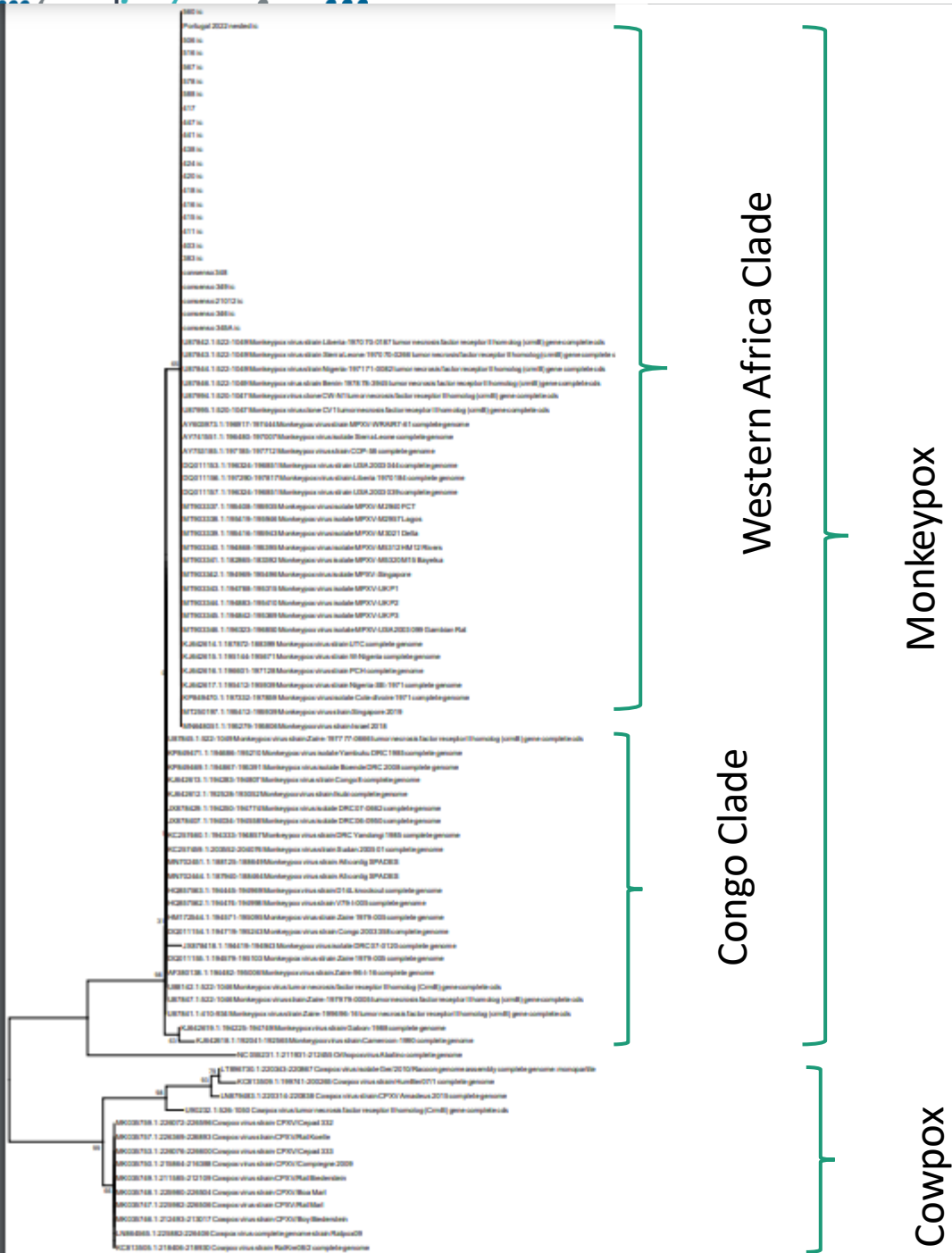
## Laboratory criteria:

Detection of MPX virus genome (MPXV) by specific or generic PCR for Orthopoxvirus in clinical sample

## Isolation in Vero E6 cells



Negative staining of a clinical sample (swabs obtained from the lesion in viral transport media)



# RESULTS

June, 1st.

125 positive cases (36 with sequencing)

148 negative cases

No clinical information (Mild illness: Most of them umbilicated skin lesions, fever, astenia, mialgia, inguinal adenopaties)

No epidemiological information (many of them MHM, Canary Islands party, sauna)

Methodology transfer to hospitals and laboratories of the National Health System

Implementing MPXV specific PCRs

Trying to obtain immunofluorescence assays for serology



## WP1: Clinical Research

Patients evolution.  
Risk groups.

Contacts and pets

## WP2: Virological research

Virus in fluids

Immunity

Sequencing

## WP3: Standarization of proceedings for control and detection

Differential  
diagnosis

Methodological  
standarization

# Coordination

# National Institute of Health Carlos III

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*Angel Zaballos (Genomics)*  
*Isabel Cuesta (Bioinformatics)*  
*Daniel Luque (microscopy)*