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Mpox virus factsheet

Mpox virus is a zoonotic orthopox virus which was first reported in humans in 1970 (in the Democratic Republic of Congo). Since then, it has rarely been reported outside specific regions of Africa where it is endemic. Mpox is endemic in the rainforests of Central and Western Africa where monkeys and squirrels may cycle the virus. The virus is related to the smallpox virus and can cause similar symptoms though the mortality rate is much lower. Symptoms include fever and the development of numerous lesions on the face and body. Secondary complications such as encephalitis have been reported but tend to be rare in healthy individuals.

From January 2022 onwards, there have been 88,144 confirmed cases and the World Health Organisation has declared it an “evolving threat of moderate public health concern”. Human to human transmission occurs through respiratory droplets or contact with infected skin. It has been suggested that the current outbreak has occurred due to either a change in the virus or changes in human behaviour, potentially linked to the relaxation of Covid-19 restrictions.

Rapid and accurate diagnosis of Mpox infection is critical to contain community spread of the virus. At Micropathology, we have developed a Mpox specific probe-based PCR assay, based on a published paper (Fig. 1). This assay is fully validated and is awaiting UKAS accreditation. Validation data has shown the assay to be both highly specific and very sensitive (limit of detection - 84 copies/ml), allowing effective detection in samples with low viral loads. The recommended sample type for this assay is a swab of an infected area (respiratory swabs and whole blood are also validated sample types). During the assay validation, Mpox DNA was also detected in plasma, serum, CSF.

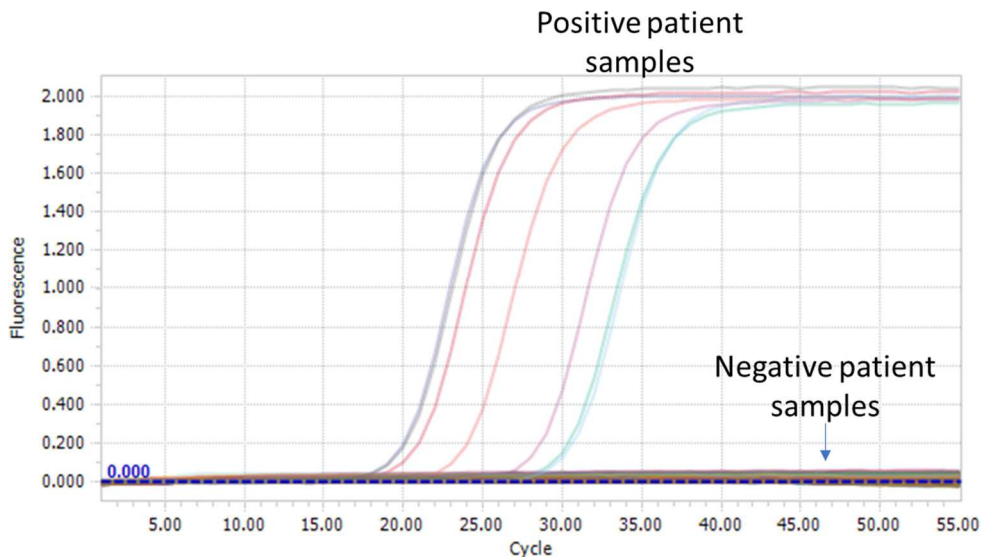


Figure 1: Detection of Mpox virus using a specific probe-based PCR assay

Key References:

Adler et al. 2022. Clinical features and management of human monkeypox: a retrospective observational study in the UK. *Lancet Infect Dis.* [https://doi.org/10.1016/S1473-3099\(22\)00228-6](https://doi.org/10.1016/S1473-3099(22)00228-6).

Thornhill et al. 2022. Monkeypox Virus Infection in Humans across 16 Countries — April–June 2022. *NEJM* DOI:10.1056/NEJMoa2207323.