to BLAST analyses (https://blast.ncbi.nlm.nih.gov/Blast. cgi). The YFV Uganda 2016 strain envelope sequence was aligned with reference YFV genomes by using MAFFT through the EMBL-EBI server (http://www.ebi.ac.uk), and phylogenies were generated with BEAST 1.8.4 (9), as previously described (7).

BLAST analyses determined that the highest percentage identity (95%) is shared between the Uganda 2016 strain and strains from South Sudan 2003 in the envelope region (the only region for which data from the Sudan strain are available) versus 83% with Angola 2016 strains from the same region. Furthermore, the Uganda 2016 sequences corresponding to the NS genes NS3 and NS5 have the highest percentage identities (94% and 95%, respectively) with a Uganda 1948 strain relative to 85% and 84% with the Angola 2016 strains in the same regions. Together these BLAST analyses indicate that the Uganda 2016 YFV is most similar to strains in the East African genotype. Phylogenetic analyses confirm the BLAST analyses and place the Uganda 2016 YFV in a well-supported clade along with these East African genotype strains, whereas the Angola 2016 strains group with an Angola 1971 YFV (Figure), indicating that the Uganda outbreak in 2016 was not seeded by the Angola outbreak.

These findings reiterate the endemicity of YFV throughout the tropical regions of Africa because at least 2 concurrent yellow fever outbreaks of independent origins were identified in 2016. Our findings also highlight the importance of assessing the molecular epidemiology of the virus in outbreak investigations. These data improve our understanding of YFV epidemiology in Africa and support the previous studies of Mutebi and colleagues (2). In addition, removal of contaminating ribosomal RNA proved to be an effective method for unbiased enrichment of viral RNA in degraded samples to enhance sequencing sensitivity.

About the Author

Dr. Hughes is a research microbiologist in the Diagnostic and Reference Team, Arboviral Diseases Branch, Division of VectorBorne Diseases, National Center for Emerging and Zoonotic Infectious Diseases, CDC, Fort Collins, Colorado. Her research interests include genomic characterization, immunology, and diagnostic development for arboviruses.

References

- Mutebi JP, Barrett AD. The epidemiology of yellow fever in Africa. Microbes Infect. 2002;4:1459–68. http://dx.doi.org/10.1016/ S1286-4579(02)00028-X
- Mutebi JP, Wang H, Li L, Bryant JE, Barrett AD. Phylogenetic and evolutionary relationships among yellow fever virus isolates in Africa. J Virol. 2001;75:6999–7008. http://dx.doi.org/10.1128/ JVI.75.15.6999-7008.2001
- Grobbelaar AA, Weyer J, Moolla N, Jansen van Vuren P, Moises F, Paweska JT. Resurgence of yellow fever in Angola, 2015–2016. Emerg Infect Dis. 2016;22:1854–5. http://dx.doi.org/ 10.3201/eid2210.160818
- World Health Organization. Yellow fever situation report, 28 April 2016 [cited 2017 Dec 10]. http://www.who.int/emergencies/ yellow-fever/situation-reports/28-April-2016/en/
- World Health Organization. Yellow fever situation report, 9 June 2016 [cited 2018 May 2]. http://www.who.int/emergencies/ yellow-fever/situation-reports/9-june-2016/en/
- Domingo C, Patel P, Yillah J, Weidmann M, Méndez JA, Nakouné ER, et al. Advanced yellow fever virus genome detection in point-of-care facilities and reference laboratories. J Clin Microbiol. 2012;50:4054– 60. http://dx.doi.org/10.1128/JCM.01799-12
- Hughes HR, Lanciotti RS, Blair CD, Lambert AJ. Full genomic characterization of California serogroup viruses, genus *Orthobunyavirus*, family *Peribunyaviridae* including phylogenetic relationships. Virology. 2017;512:201–10. http://dx.doi.org/ 10.1016/j.virol.2017.09.022
- Matranga CB, Andersen KG, Winnicki S, Busby M, Gladden AD, Tewhey R, et al. Enhanced methods for unbiased deep sequencing of Lassa and Ebola RNA viruses from clinical and biological samples. Genome Biol. 2014;15:519. http://dx.doi.org/10.1186/ s13059-014-0519-7
- Drummond AJ, Suchard MA, Xie D, Rambaut A. Bayesian phylogenetics with BEAUti and the BEAST 1.7. Mol Biol Evol. 2012;29:1969–73. http://dx.doi.org/10.1093/molbev/mss075

Address for correspondence: Holly R. Hughes, Arboviral Disease Branch, Division of Vector-Borne Diseases, National Center for Emerging and Zoonotic Infectious Diseases, CDC, 3156 Rampart Rd, Fort Collins, CO 80521, USA; email: ltr8@cdc.gov

LETTERS

Visceral Leishmaniasis in Traveler to Guyana Caused by *Leishmania siamensis*, London, UK

Jérôme Depaquit, Matthieu L. Kaltenbach, Frédérick Gay

Author affiliations: Reims Champagne-Ardenne University, Rheims, France (J. Depaquit, M.L. Kaltenbach); Maison Blanche Hospital, Reims (J. Depaquit); Pitié-Salpêtrière Hospital, Paris, France (F. Gay); Sorbonne University, Paris (F. Gay)

DOI: https://doi.org/10.3201/eid2408.172147

To the Editor: In a case report of visceral leishmaniasis in a traveler returning from Guyana, Polley et al. identified *Leishmania siamensis* as the causative agent (1). However, we believe that the parasite responsible for this infection has been misidentified. Classification of parasites formerly identified as *L. siamensis* has recently been revisited (2) after description of a new species

LETTERS

(*L. martiniquensis*) from the West Indies (3). All previously described *L. siamensis* strains, except 1, are now reported as *L. martiniquensis*. Their rDNA internal transcribed spacer 1 sequences are still deposited in GenBank under the name *L. siamensis*. The exception, reported from Thailand (GenBank accession no. JX195640), is the only known *L. siamensis* sample to date.

New analysis of Leishmania (Mundinia) sequences available in GenBank and of L. infantum showed no variability in L. martiniquensis, including the sequence (GenBank accession no. LT577674) reported by Polley et al. (1), and sequence divergence when compared with L. siamensis (32.4%), a Leishmania sp. from Ghana (32.3%) (4), L. enrietti (30.6%), and L. infantum (43.6%). L. martiniquensis has been reported worldwide (Florida, West Indies, central Europe, and Southeast Asia). However, L. siamensis has been reported only once (in Thailand).

If one considers possible quiescence of the parasite, and that the patient was from Guyana, migrated to the United Kingdom in 1967, and had a relevant travel history, including visits to France (2003), Ghana (2005), Caribbean Grenada (2012), and Guyana (2012 and 2013), the geographic origin of this infection is unknown. Moreover, the mode of transmission of *L. martiniquensis* is not yet clearly defined. In contrast to the report of Polley et al. (*I*), although the genus *Sergentomyia* could play a role in some foci of leishmaniasis, it has never been recorded in the Americas (*5*).

References

- Polley SD, Watson J, Chiodini PL, Lockwood DNJ. Visceral leishmaniasis in traveler to Guyana caused by *Leishmania* siamensis, London, UK. Emerg Infect Dis. 2018;24:155–6. http://dx.doi.org/10.3201/eid2401.161428
- Leelayoova S, Siripattanapipong S, Manomat J, Piyaraj P, Tan-Ariya P, Bualert L, et al. Leishmaniasis in Thailand: a review of causative agents and situations. Am J Trop Med Hyg. 2017;96:534–42.
- Desbois N, Pratlong F, Quist D, Dedet JP. Leishmania (Leishmania) martiniquensis n. sp. (Kinetoplastida: Trypanosomatidae), description of the parasite responsible for cutaneous leishmaniasis in Martinique Island (French West Indies). Parasite. 2014;21:12. http://dx.doi.org/10.1051/parasite/2014011
- Kwakye-Nuako G, Mosore MT, Duplessis C, Bates MD, Puplampu N, Mensah-Attipoe I, et al. First isolation of a new species of *Leishmania* responsible for human cutaneous leishmaniasis in Ghana and classification in the *Leishmania enriettii* complex. Int J Parasitol. 2015;45:679–84. http://dx.doi.org/10.1016/j.ijpara.2015.05.001
- Maia C, Depaquit J. Can Sergentomyia (Diptera, Psychodidae) play a role in the transmission of mammal-infecting Leishmania? Parasite. 2016;23:55. http://dx.doi.org/10.1051/parasite/2016062

Address for correspondence: Jérôme Depaquit, Faculte de Pharmacie, Parasitology, 51 Rue Cognacq-Jay, Rheims 51100, France; email: jerome.depaquit@univ-reims.fr

Visceral Leishmaniasis in Traveler to Guyana Caused by *Leishmania siamensis*, London, UK

Saovanee Leelayoova, Suradej Siripattanapipong, Mathirut Mungthin

Author affiliations: Phramongkutklao College of Medicine, Bangkok, Thailand (S. Leelayoova, M. Mungthin); Mahidol University, Bangkok (S. Siripattanapipong)

DOI: https://doi.org/10.3201/eid2408.180192

To the Editor: Polley et al. reported a case of *Leishmania siamensis* infection outside Thailand (1). In Thailand, 2 *Leishmania* species, *L. siamensis* (MON-324, World Health Organization code MHOM/TH/2010/TR) and *L. martiniquensis* (MON-229, World Health Organization codes MHOM/TH/2011/PG and MHOM/MQ/92/MAR1), are sporadically reported in immunocompetent and immunocompromised patients and cause cutaneous and visceral leishmaniasis (2). Cases of asymptomatic visceral leishmaniasis caused by both species were also detected in HIV-infected patients in Thailand (3).

Before 2017, *L. siamensis* was described as having 2 lineages: PG and TR. Additional information from zymodeme and genetic analysis indicated that these 2 lineages are different species (i.e., lineage PG is *L. martiniquensis* and lineage TR is *L. siamensis*) (2). A review of leishmaniasis cases in Thailand during 1999–2016 (2) summarized the biological characteristics of *L. martiniquensis* and *L. siamensis* and clarified *Leishmania* species reported in humans (Thailand and Myanmar), animals (Thailand, Germany, Switzerland, and the United States), and sand flies (Thailand).

Polley et al. (1) reported phylogenetic analysis of internal transcribed spacer 1 sequences of 8 isolates of *L. siamensis* (GenBank accession nos. EF200012, JX195637, GQ281279, GQ226034, JQ866907, JQ617283, JQ001751, and GQ293226) against reference sequences of other *Leishmania* species. Their results confirmed that these sequences clustered with *L. siamensis* sequences as a monophyletic group, supported by bootstrap values of 100%.

However, 7 of these sequences (GenBank accession nos. EF200012, JX195637, GQ281279, GQ226034, JQ866907, JQ001751, and JQ617283) are *L. martiniquensis* sequences (MON-229), as reported in our article (2). Thus, we have revised and updated our sequences submitted to GenBank regarding the species of *L. martiniquensis* (MON-229) and *L. siamensis* (MON-324) for future analysis.

The patient had a history of traveling to Caribbean Grenada, which is in the same geographic area where *L. martiniquensis* was first reported (4). Thus, we believe