

GENOME SEQUENCING

The Complete Genome Sequences of 19 Species of Snipes (Scolopacidae, Charadriiformes, Aves)

João Marcos G. Capurro^{1,2}, Taylor Hains^{3,4}, Stacy Pirro⁵, John Bates³, Shannon Hackett³

¹ Coordenação de Biodiversidade, Field Museum of Natural History, ² Committee on Evolutionary Biology, Instituto Nacional de Pesquisas da Amazônia,

³ Negaunee Integrative Research Center, Field Museum of Natural History, ⁴ University of Chicago, Committee on Evolutionary Biology, ⁵ Biodiversity, Iridian Genomes

Keywords: bird, genome

<https://doi.org/10.56179/001c.74632>

Biodiversity Genomes

We present the complete genome sequences of 19 species of snipes from 7 genera. Illumina sequencing was performed on genetic material from museum specimens. The reads were assembled using a *de novo* method followed by a finishing step. The raw and assembled data are publicly available via Genbank.

Introduction

Snipes (Scolopacidae) include 97 extant species (Lepage, Vaidya, and Guralnick 2014; Winkler, Billerman, and Lovette 2020). We present the assembled genomes of 19 species from this family. Tissues were obtained from vouchered museum specimens. More detailed information about the specimen used for each species can be found in the Biosample linked to each genome assembly in Genbank.

Methods

DNA extraction was performed using the Qiagen DNAeasy genomic extraction kit using the standard protocol. A paired-end sequencing library was constructed using the Illumina TruSeq kit according to the manufacturer's instructions. The library was sequenced on an Illumina Hi-Seq platform in paired-end, 2 × 150 bp format. The resulting fastq files were trimmed of adapter/primer sequence and low-quality regions with Trimmomatic v0.33 (Bolger, Lohse, and Usadel 2014). The trimmed sequence was assembled by SPAdes v2.5 (Bankevich et al. 2012) followed by a finishing step using Zanfona (Kieras, O'Neill, and Pirro 2021).

Results and Data Availability

All data, including raw reads and assembled genome sequence, is available via Genbank.

Bartramia longicauda	JAOXNH000000000
Calidris melanotos	JAOWAO000000000
Gallinago delicata	JAOQJ000000000
Gallinago gallinago	JAOQM000000000
Gallinago hardwickii	JAOQGE000000000
Gallinago jamesoni	JAOQGH000000000
Gallinago media	JAOSLN000000000
Gallinago megala	JAOQGF000000000
Gallinago nigripennis	JAOQGL000000000
Gallinago paraguaiae	JAOSZB000000000
Gallinago solitaria	JAOQGI000000000
Gallinago stenura	JAOQGM000000000
Gallinago undulata	JAOTQQ000000000
Limnodromus scolopaceus	JAOXNO000000000
Scolopax bukidnonensis	JAOWAV000000000
Scolopax minor	JAOXNG000000000
Scolopax rusticola	JAOWAS000000000
Tringa solitaria	JAOXJM000000000
Xenus cinereus	JAOXJK000000000

.....

Funding

Funding was provided by Iridian Genomes, grant# IRGEN_RG_2021-1345 Genomic Studies of Eukaryotic Taxa.

Submitted: April 10, 2023 EDT, Accepted: April 21, 2023 EDT

REFERENCES

- Bankevich, Anton, Sergey Nurk, Dmitry Antipov, Alexey A. Gurevich, Mikhail Dvorkin, Alexander S. Kulikov, Valery M. Lesin, et al. 2012. “SPAdes: A New Genome Assembly Algorithm and Its Applications to Single-Cell Sequencing.” *Journal of Computational Biology* 19 (5): 455–77. <https://doi.org/10.1089/cmb.2012.0021>.
- Bolger, Anthony M., Marc Lohse, and Bjoern Usadel. 2014. “Trimmomatic: A Flexible Trimmer for Illumina Sequence Data.” *Bioinformatics* 30 (15): 2114–20. <https://doi.org/10.1093/bioinformatics/btu170>.
- Kieras, M., K. O’Neill, and S. Pirro. 2021. *Zanfona, a genome assembly finishing tool for paired-end Illumina reads*. <https://github.com/zanfona734/zanfona>.
- Lepage, Denis, Gaurav Vaidya, and Robert Guralnick. 2014. “Avibase – a Database System for Managing and Organizing Taxonomic Concepts.” *Zookeys* 420 (June): 117–35. <https://doi.org/10.3897/zookeys.420.7089>.
- Winkler, David W., Shawn M. Billerman, and Irby J. Lovette. 2020. “Sandpipers and Allies (Scolopacidae).” In *Birds of the World*, edited by Shawn M. Billerman, Brooke K. Keeney, Paul G. Rodewald, and Thomas S. Schulenberg. Cornell Lab of Ornithology. <https://doi.org/10.2173/bow.scolop2.01>.