

3D model related to the publication: three-dimensional and histological observations on male genital organs of greater horseshoe bat, *Rhinolophus ferrumequinum*.

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Abstract

The present Dataset contains the 3D model of the male genital organs of greater horseshoe bat, *Rhinolophus ferrumequinum*. This is the first detailed 3D structure of the soft-tissue genital organs of bats. The 3D model was generated using microCT and techniques of virtual reconstruction.

Keywords: convergence, evolution, homology, reproductive organ, Yinpterochiroptera

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Model IDs	Taxon	Description
JP18-006	<i>Rhinolophus ferrumequinum</i>	genital organs of male greater horseshoe bat.

Table 1. Involved specimen. Collection: College of Veterinary Medicine, Seoul National University, Korea

INTRODUCTION

The greater horseshoe bat, *Rhinolophus ferrumequinum*, belongs to the family Rhinolophidae, suborder Yinpterochiroptera, and is distributed from Europe to Japan (Csorba et al. 2003). Although *Rhinolophus* is a large specious group in bats, the anatomy of its male genital organs, which is highly diverse, is still poorly described. Regarding *R. ferrumequinum*, only brief descriptions by Krutzsch (2000) are available, who reported on the structures of the testis and epididymis, although the anatomy of the accessory genital glands was not described in detail. Given these, we present the detailed three-dimensional structure of the male soft-tissue genital organs of bats for the first time, with special reference to the accessory genital glands (see Sohn et al. 2020, and Fig. 1 and table 1).

METHODS

The organs were fixed with 10% formaldehyde for 48 hours, transferred to 70% ethanol, and then stained with 1% iodine in ethanol for 14 days before scanning (diceCT). The specimen was scanned using a microCT system (inspeXio SMX-90CT Plus, Shimadzu corp., Kyoto, Japan) at City University of Hong Kong with a 90kv source voltage and 100mA source current. The voxel size of the images was 34 μm. We reconstructed the serial images of male genital organs and generated stl models using the Amira 5.2 software (Visage Imaging, San Diego, USA).

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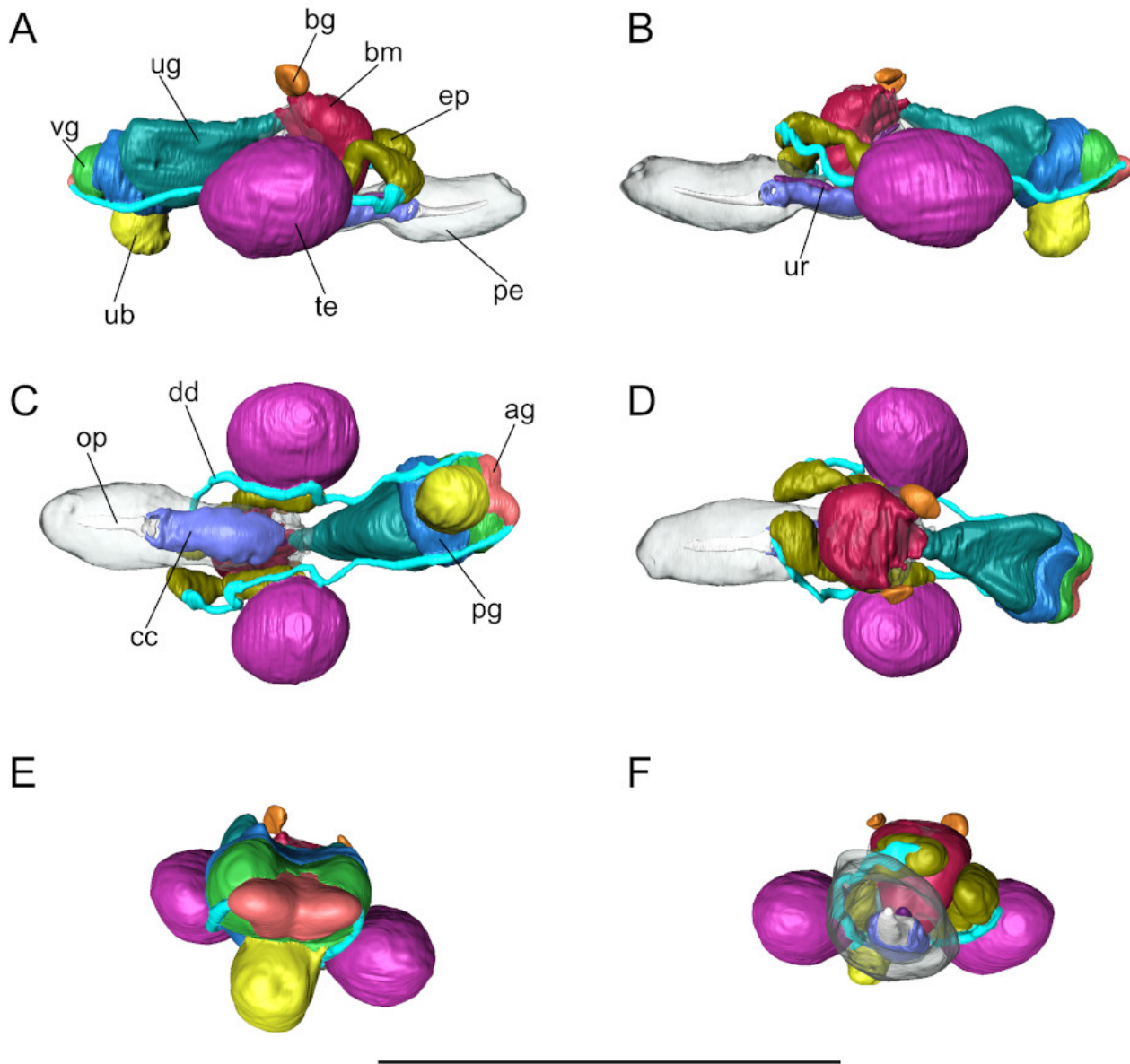


Figure 1. The genital organs of male greater horseshoe bat. A, left lateral; B, right lateral; C, ventral; D, dorsal; E, anterior; and F, posterior view. The *os penis*, urethra, and corpus cavernosum are located inside the penis. ag, ampullary glands; bg, bulbourethral glands; bm, bulbospongious muscle; cc, corpus cavernosum; dd, deferent duct; ep, epididymis; op, *os penis*; pe, penis; pg, prostate gland; te, testis; ub, urinary bladder; ug, urethral gland; ur, urethra; vg, vesicular glands. Scale bars = 30mm.