### Title

3D models related to the publication: Morphogenesis of the liver during the human embryonic period

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3D models related to the publication: Morphogenesis of the liver during the human embryonic period

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Abstract

Keywords: human embryo, human liver, magnetic resonance imaging, three-dimensional reconstruction

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INTRODUCTION
The morphogenesis of the human liver was visualized using images derived from human embryo specimens between Carnegie stage (CS) 14 and CS 23 from the Kyoto Collection, which were acquired with a magnetic resonance microscope equipped with a 2.35-T superconducting magnet. (see Table 1).

METHODS
Well-preserved human embryos between Carnegie stage (CS) 14 and the CS 23 (approximately 5–8 weeks after fertilization) were selected from Kyoto Collection for MR microscopic imaging (Nishimura et al, 1968; Shiota et al, 2007; O’Rahilly & Müller, 1987). The MR images of the embryos were acquired using a super-parallel MR microscope developed with a 2.35 T horizontal bore (40 cm) superconducting magnet (Matsuda et al., 2007). MRI data from selected embryos were analyzed precisely as serial 2D and reconstructed 3D images. The structure of the stomach was reconstructed in all samples using OsiriXTM software version 3.7.1 (Pixmeo SARL, Geneva, Switzerland). The 3D surface models were then processed with ISE-MeshTools (Lebrun, 2014); each model was orientated and labelled using this software. All labels were provided in .flg format. The 3D surface models are also provided in .ply format, and can therefore be opened with a wider range of freeware. This study was approved by The Committee of Medical Ethics of Kyoto University Graduate School of Medicine, Kyoto, Japan (E986). Representative images of 3D models of livers are shown in Fig. 1.

ACKNOWLEDGEMENTS
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BIBLIOGRAPHY
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**Table 1.** List of models


