**Supplemental Data**

Supplemental Materials and Methods

Supplemental Figure Legends

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This study for human myocardium tissue was approved by the Clinical Research Ethics Committee of affiliated Hospital of Xuzhou Medical University (Jiangsu, China). The myocardium tissue, which had been fixed with formalin, was washed with running water. Then the myocardial tissue was frozen with liquid nitrogen to make frozen sections.

Adult male rhesus macaques (weighing approximately 5.2±1.60 kg) were provided by the Kunming Institute of Zoology, Chinese Academy of Sciences. All studies on rhesus macaques were approved by the Laboratory Animal Ethics Committee of Kunming Institute of Zoology, Chinese Academy of Sciences (license No. SYXK (Dian) K2017-0008). The animals were housed in the environment (temperature, 18-26°C; humidity, 40% -70%) with a 12/12-h light–dark cycle. Adult male rhesus macaques were anaesthetized with ketamine (10 mg/kg, i.m.), then the hearts of rhesus macaques were harvested immediately to make frozen sections.

**Supplemental Figure Legends**

Figure. S1. There were a large number of microvessels with many structural features of CCMR vessels in healthy rhesus macaques and human myocardium tissues. (A,C) Confocal immunoflourescence analysis of expression and distribution of VE-cadherin and ZO-1 in rhesus macaques (A) (n=4) and human myocardium tissues (C) (n=10); bar=10 um. (B,D) Immunofluorescence images. Light microscopy analyses coexpression of collagen IV (red) and CD31 (green) in type I and type II vessels (similar to CCMR vessels) in healthy rhesus macaques and human myocardium tissues; scale bar (original image )=50 um; bar (enlarged image)=20 um. VE-cadherin, vascular endothelial cadherin; ZO-1, zonula occludens-1.