

Figure 1. The close functional relationship between the capillaries that supply oxygen (17 large tubular profiles flushed of blood) and mitochondria that consume oxygen (numerous dark-stained organelles within the surrounding cardiomyocytes) is evident by their close morphological association as shown in this electron micrograph captured from the heart of a wild African antelope, the common duiker *Sylvicapra grimmia*.

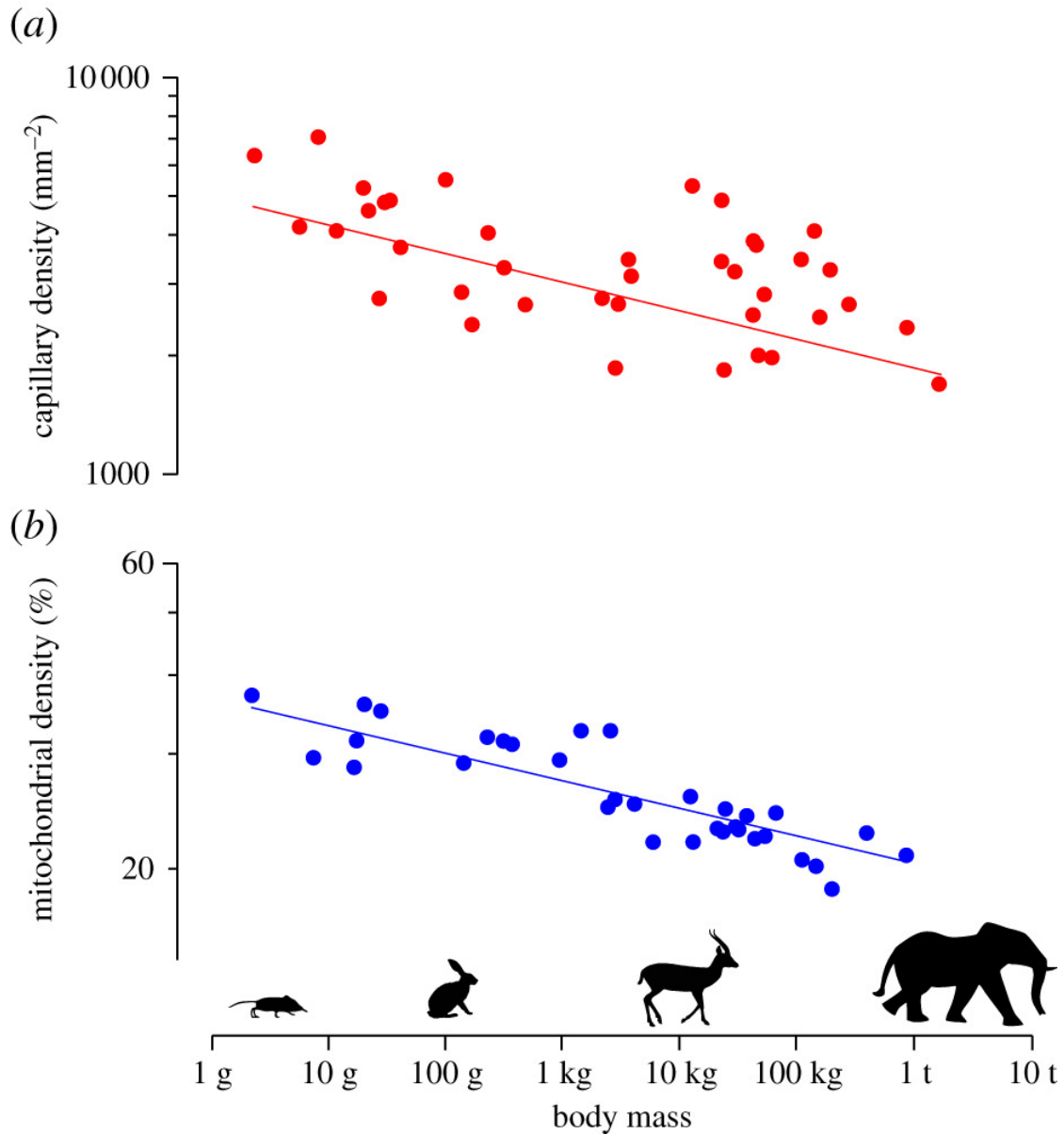


Figure 2. The relative investment of capillaries and mitochondria in the heart decreases in a proportional manner as body mass increases across five orders of magnitude among mammals. According to the PGLS analyses, (a) capillary numerical density (profile counts per mm² of cardiomyocyte) across 39 species decreases with body mass raised to the exponent of -0.07 ± 0.03 ($r^2 = 0.37$, $F_{1,37} = 21.8$, $p < 0.001$), and (b) mitochondrial volume density (% volume of cardiomyocyte) across 33 species decreases with an exponent of -0.04 ± 0.01 ($r^2 = 0.64$, $F_{1,31} = 56.0$, $p < 0.001$). Both exponents are statistically different from zero.