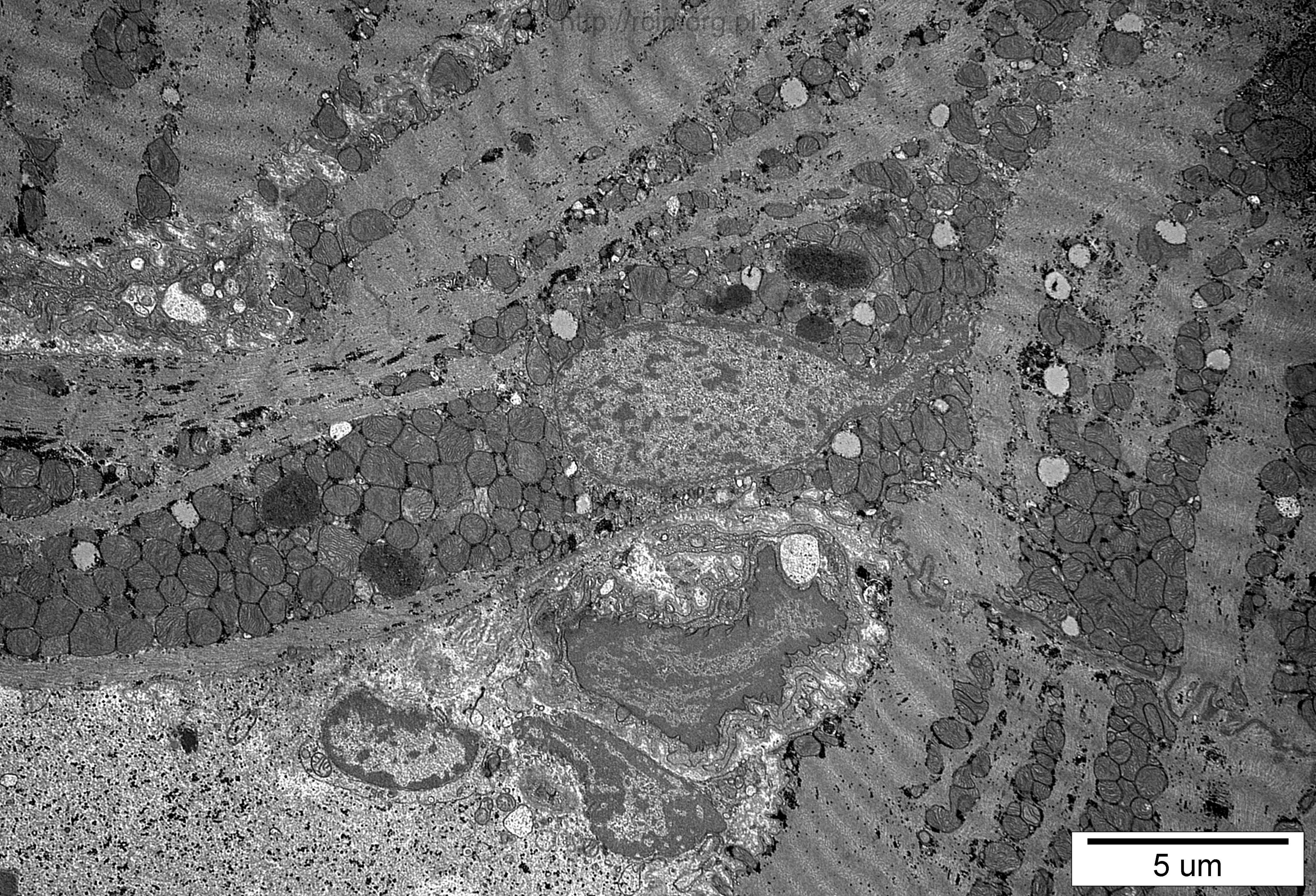


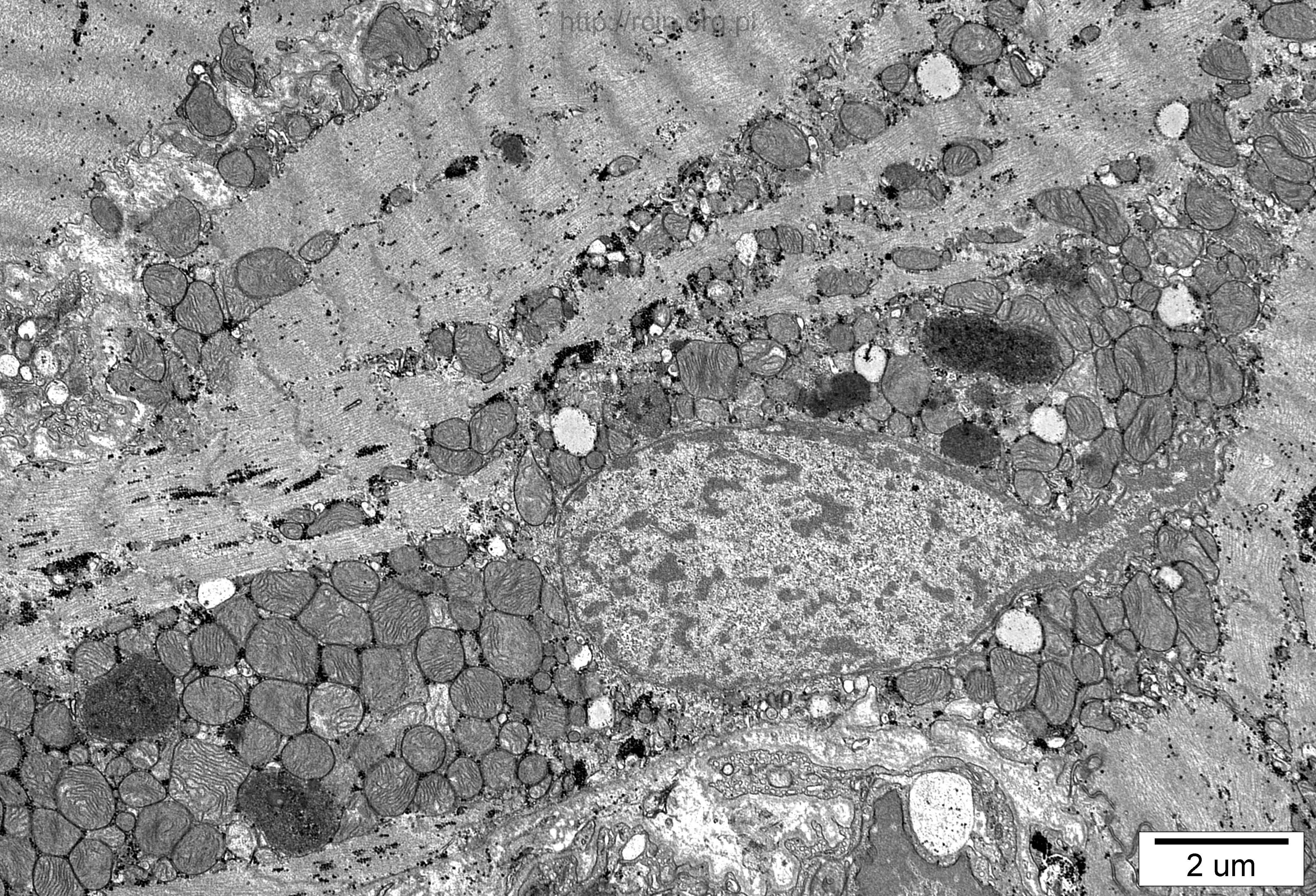
5  $\mu$ m





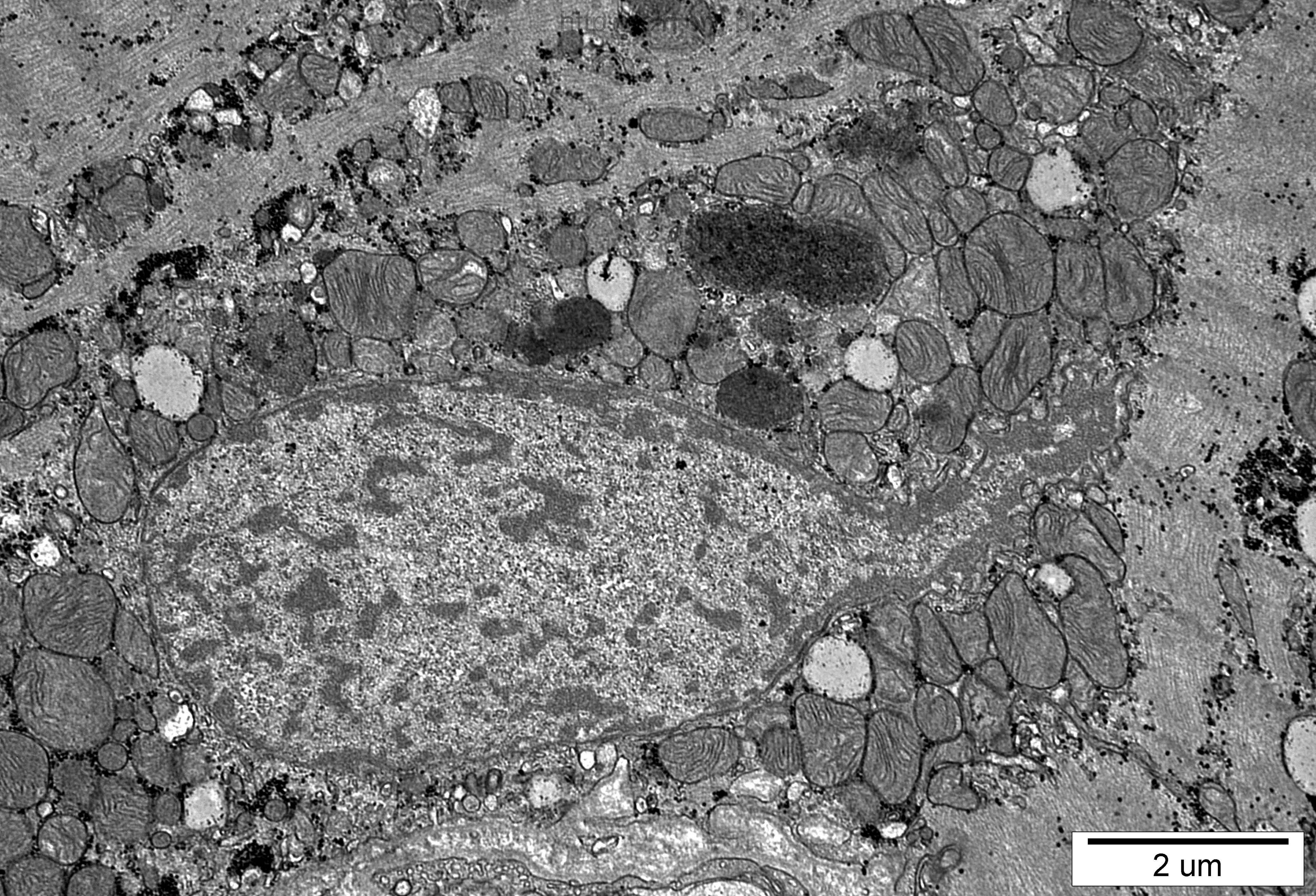
5 um





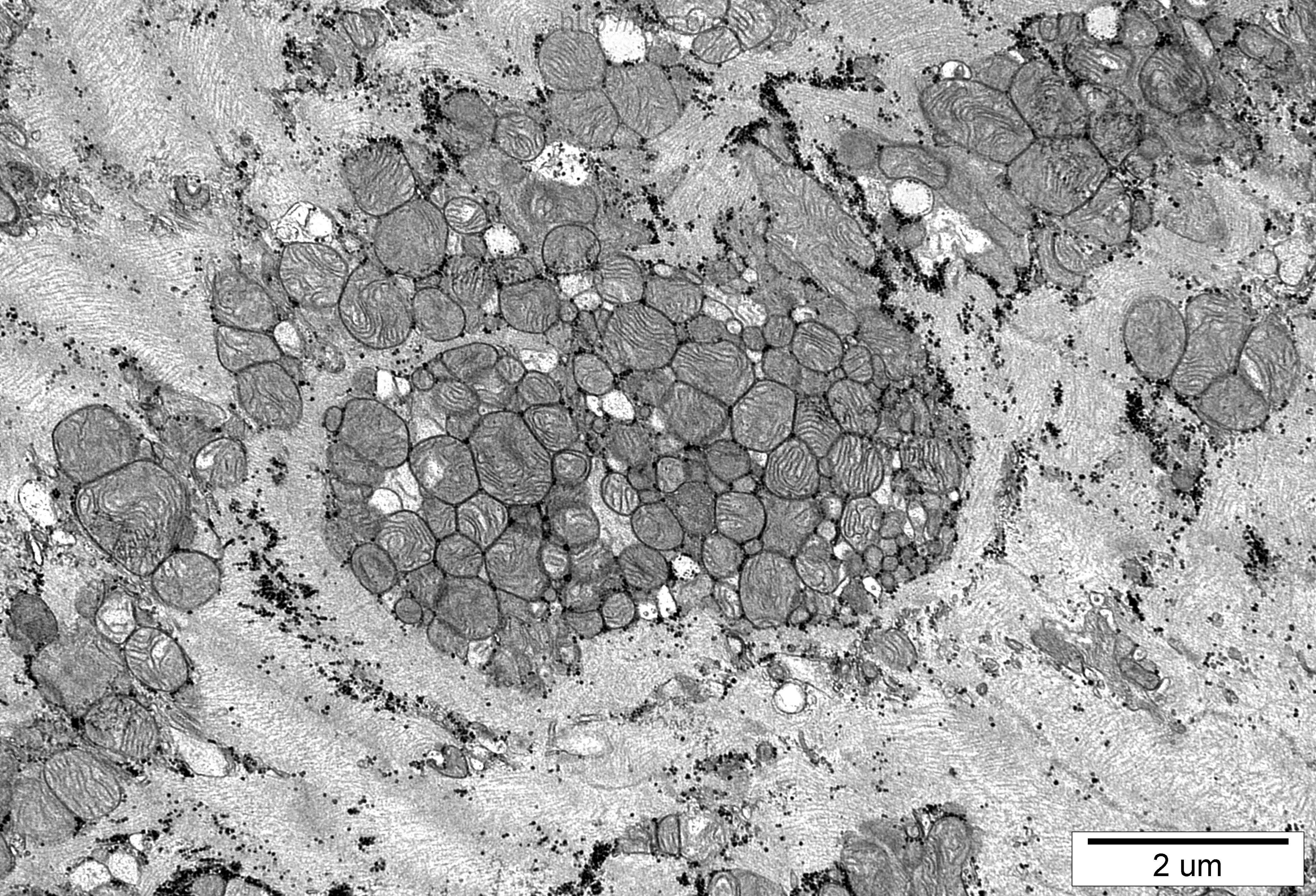
2 um





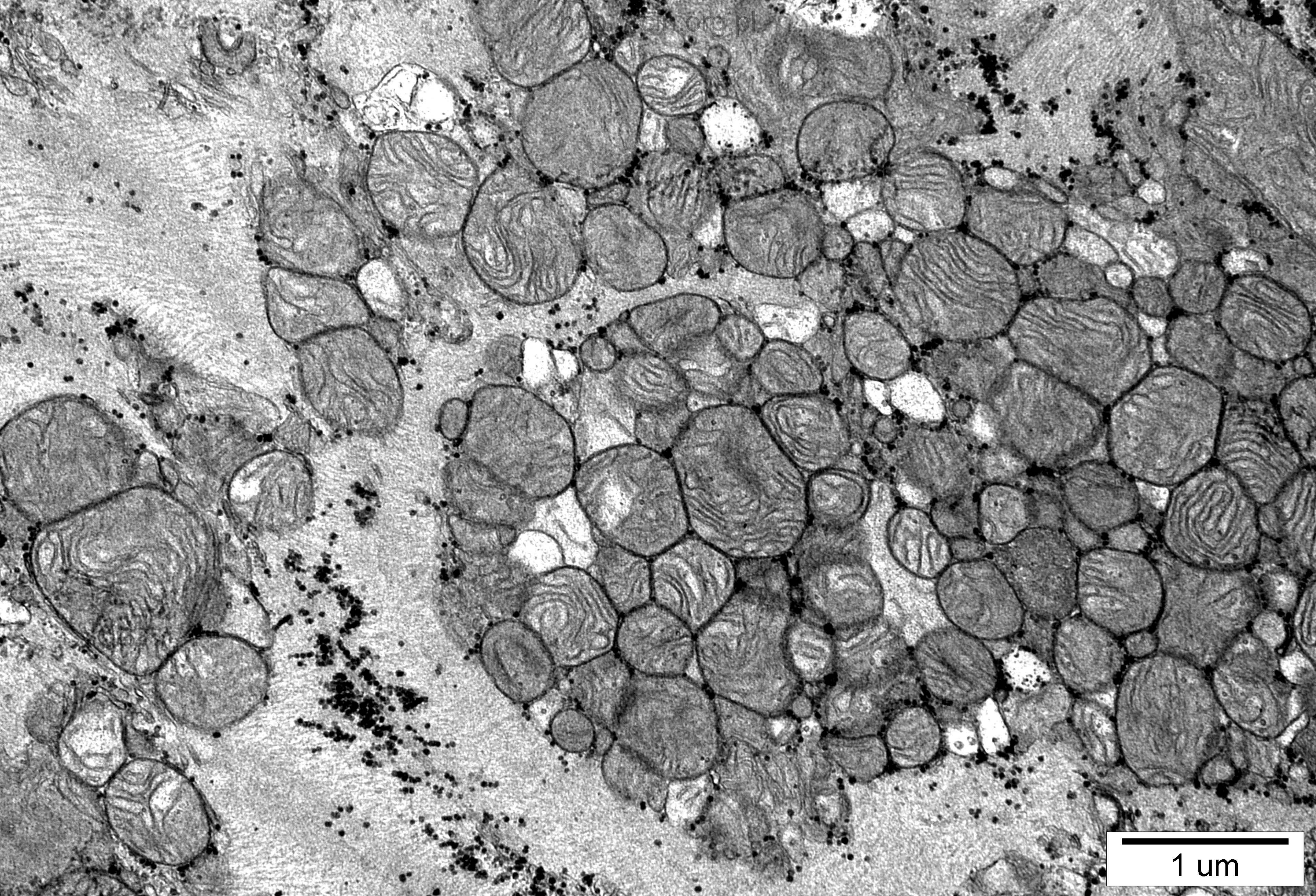
2 um





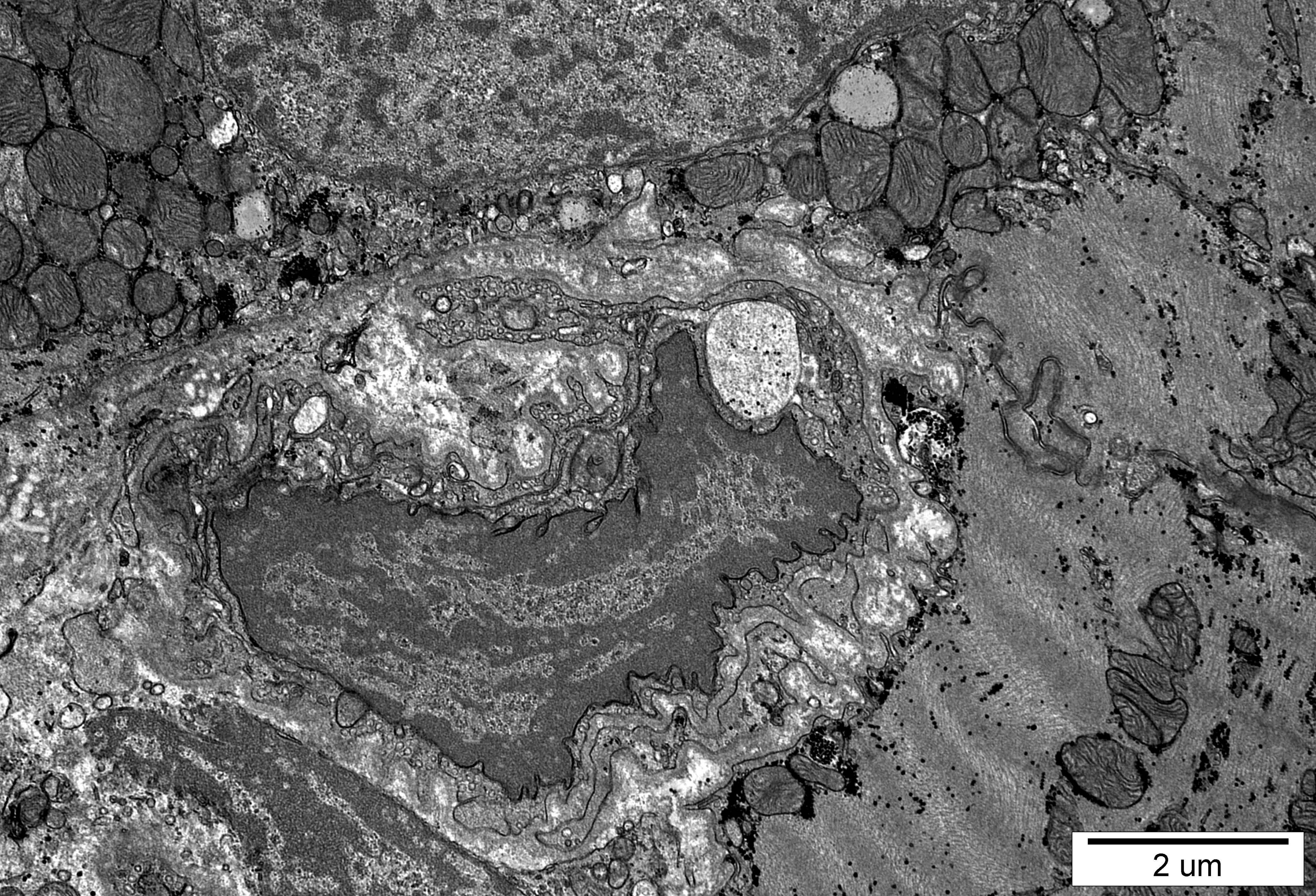
2 um





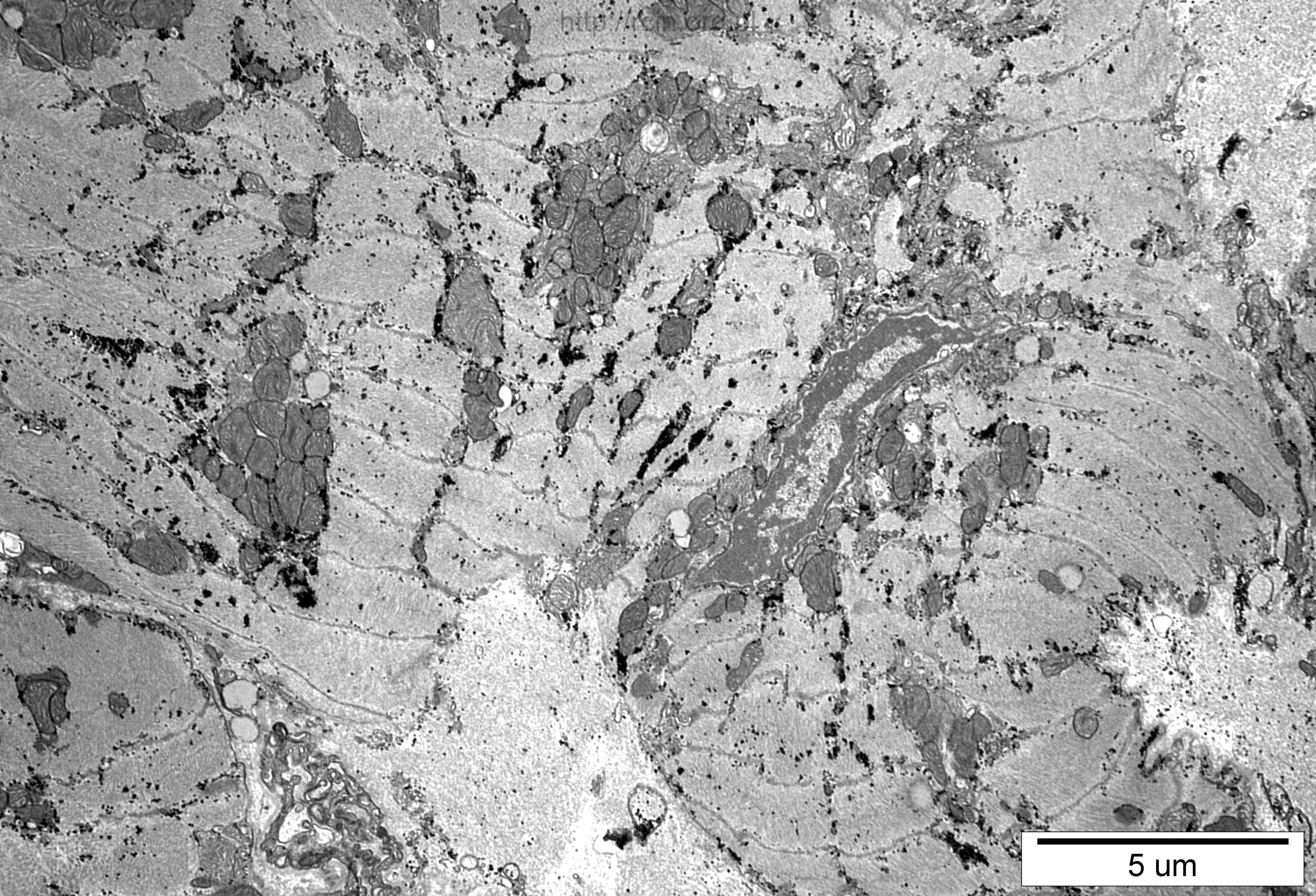
1 μm





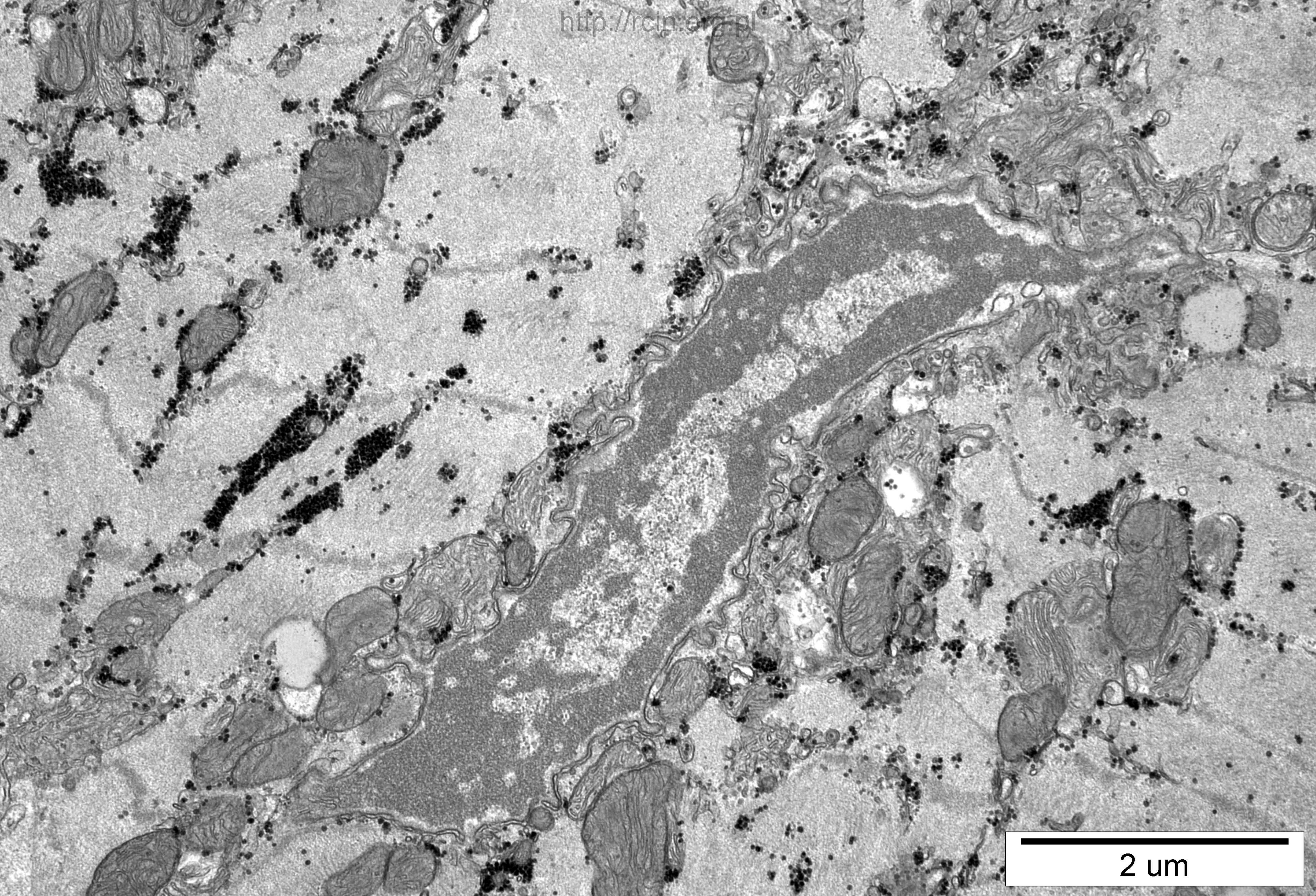
2 um





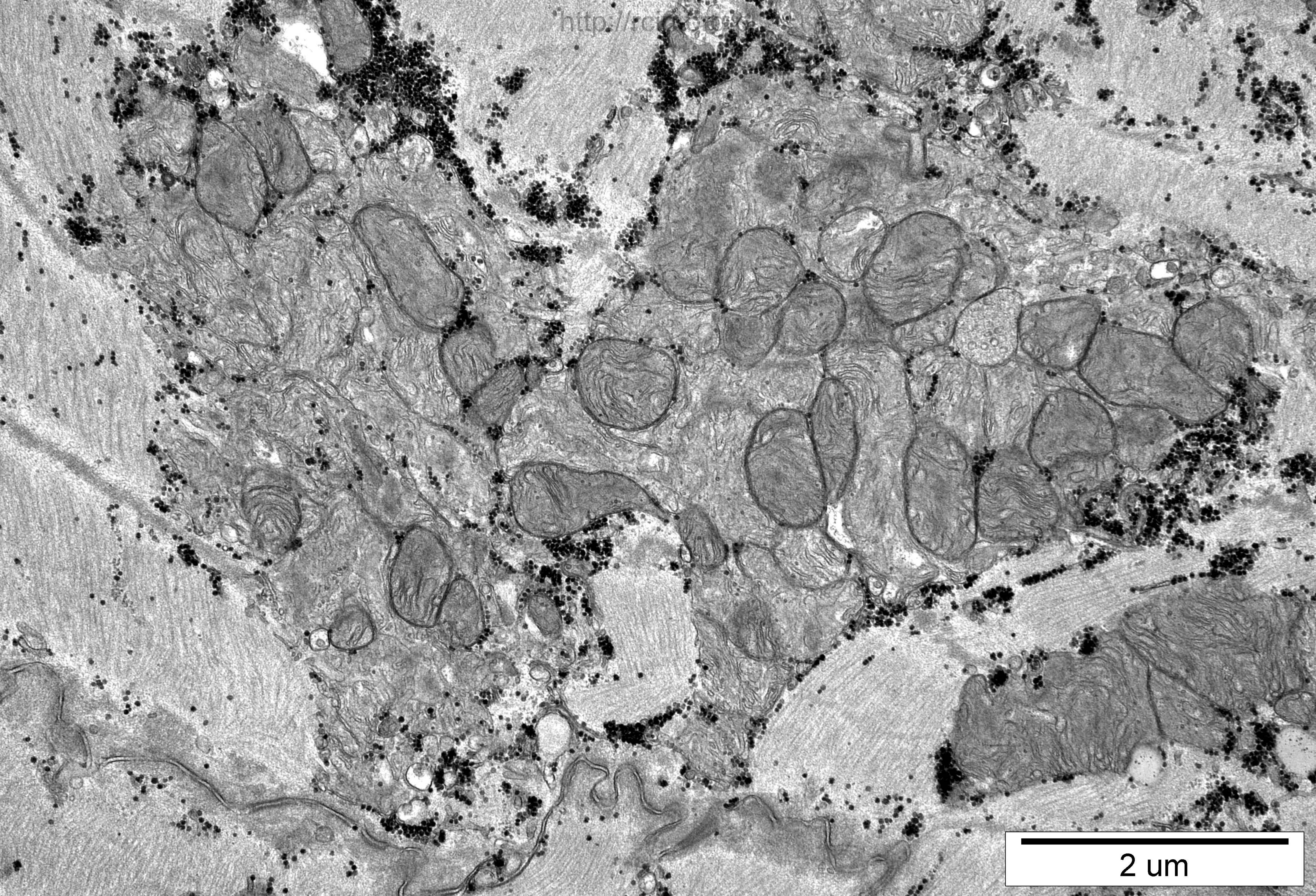
5  $\mu$ m





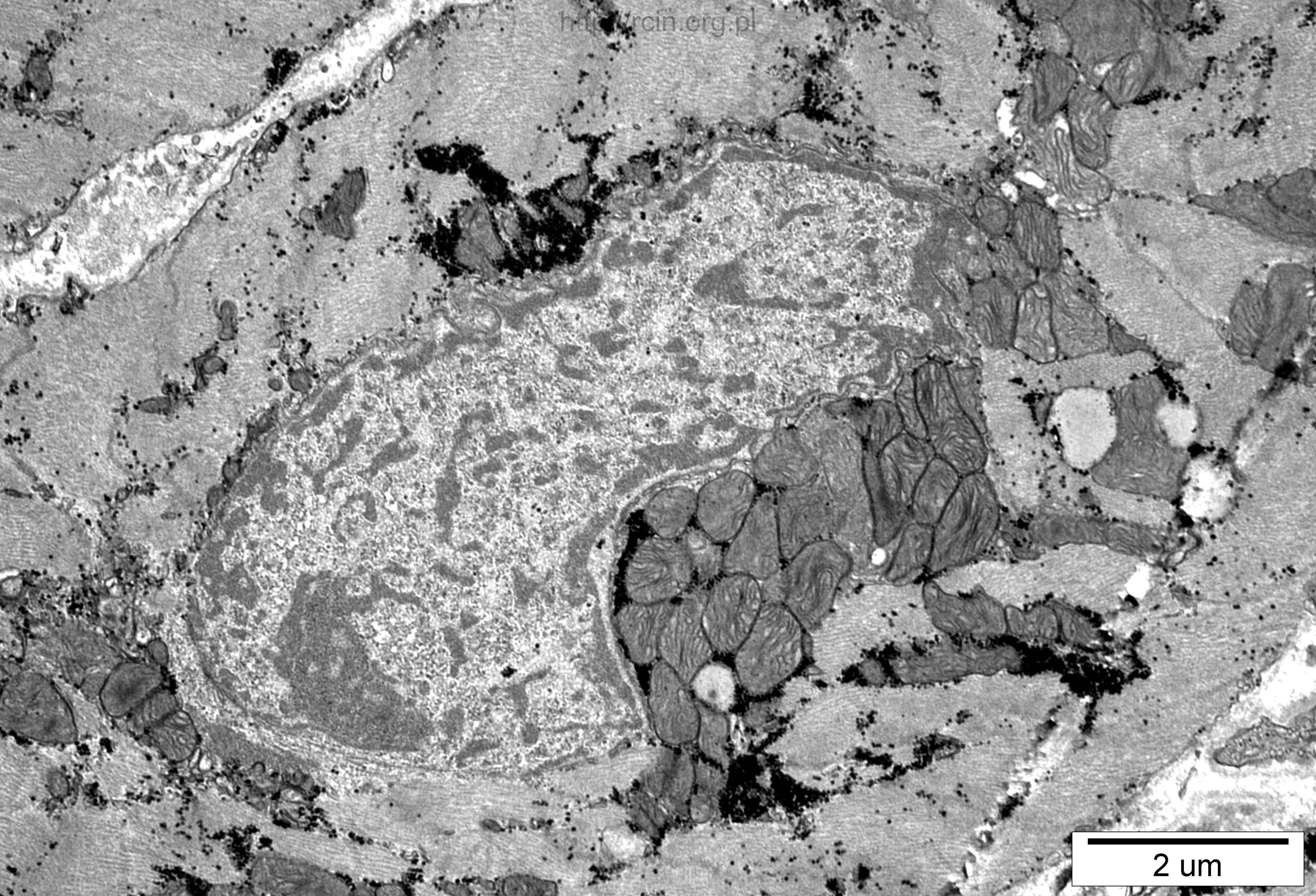
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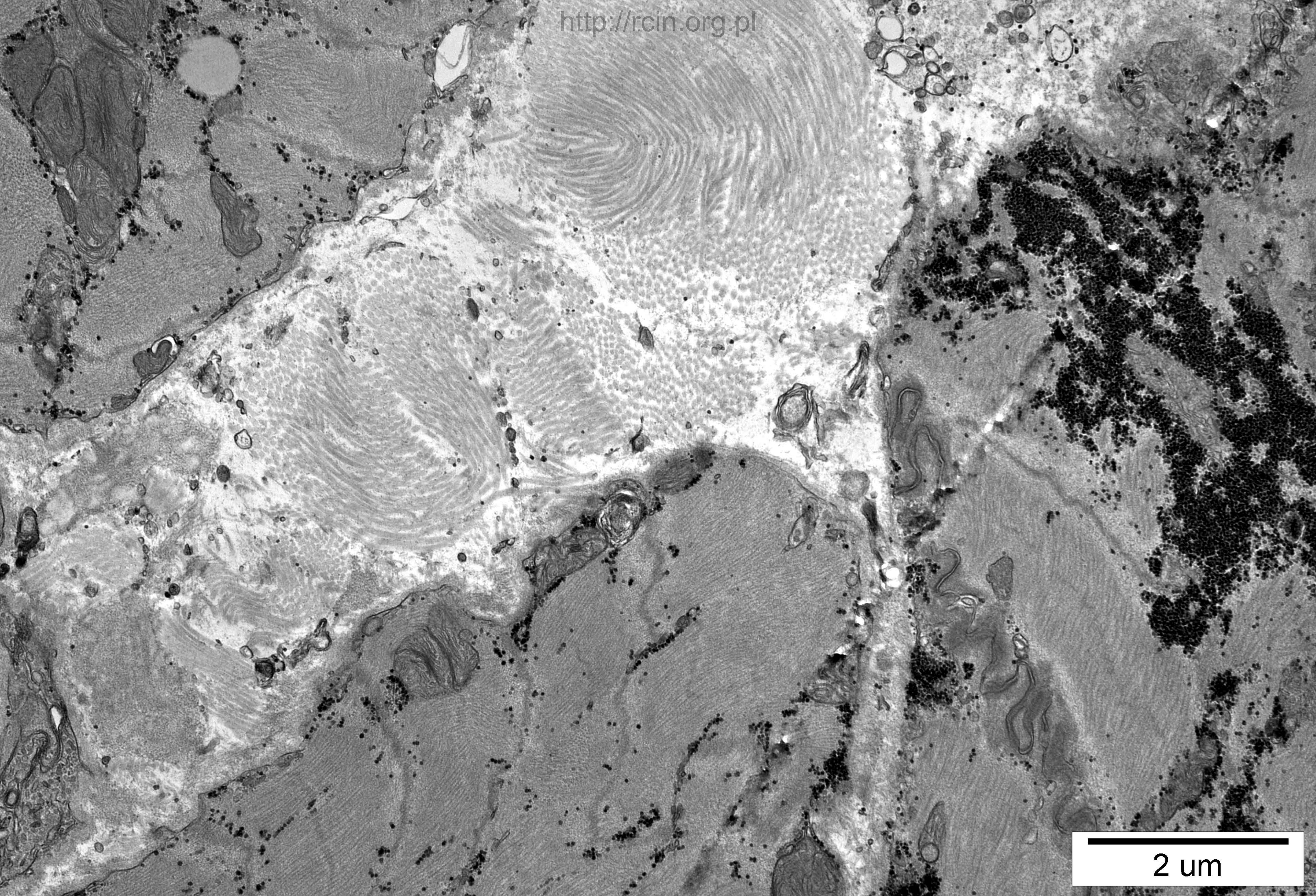
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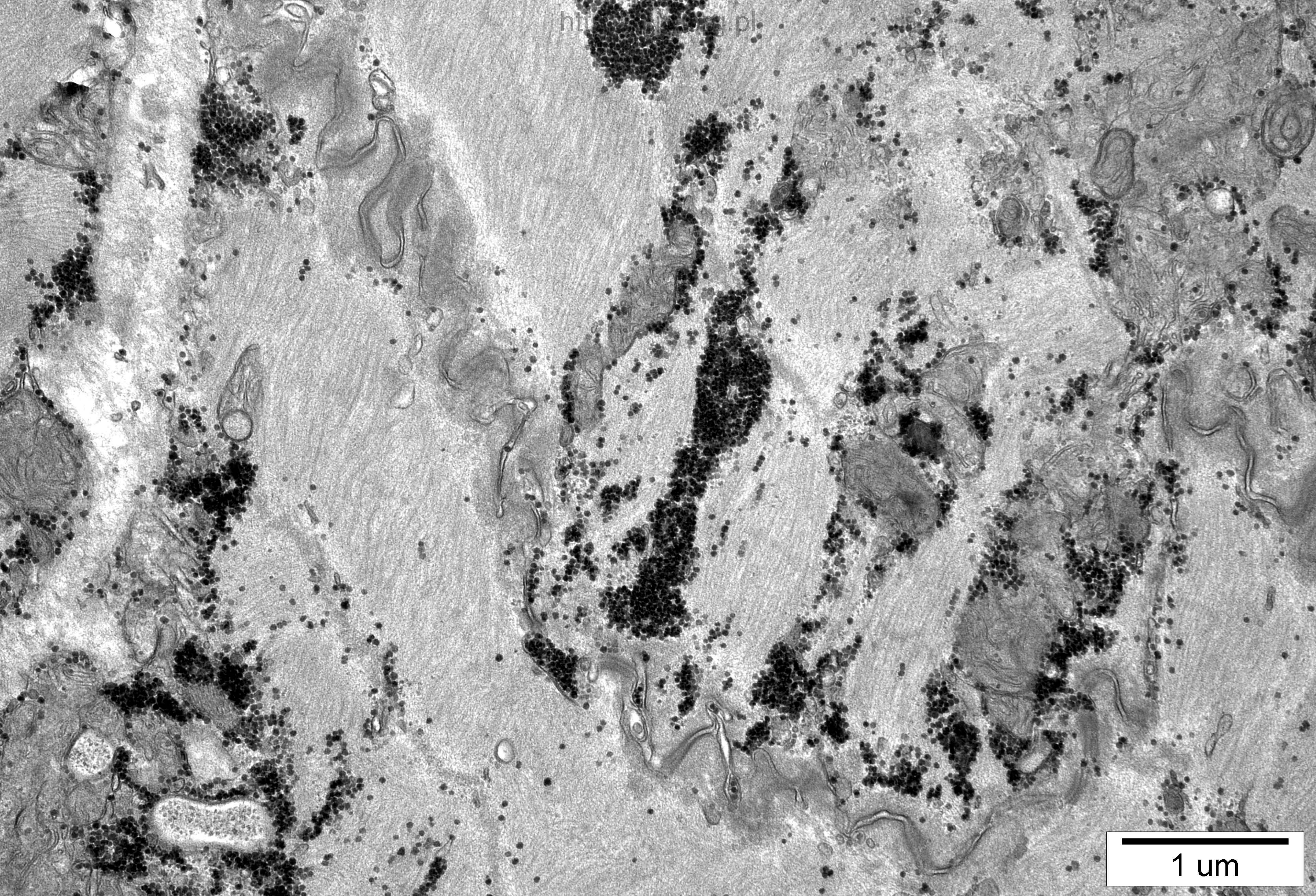
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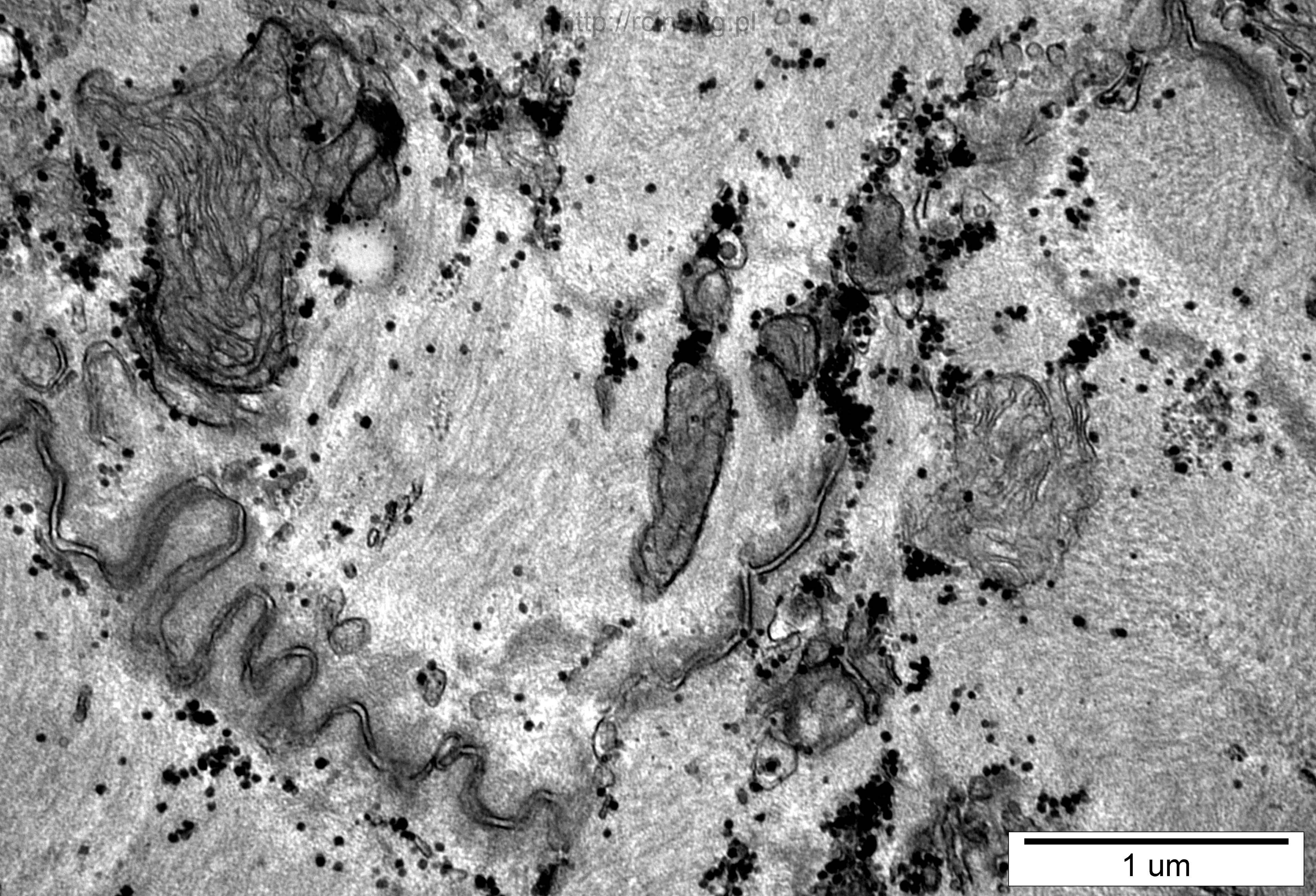
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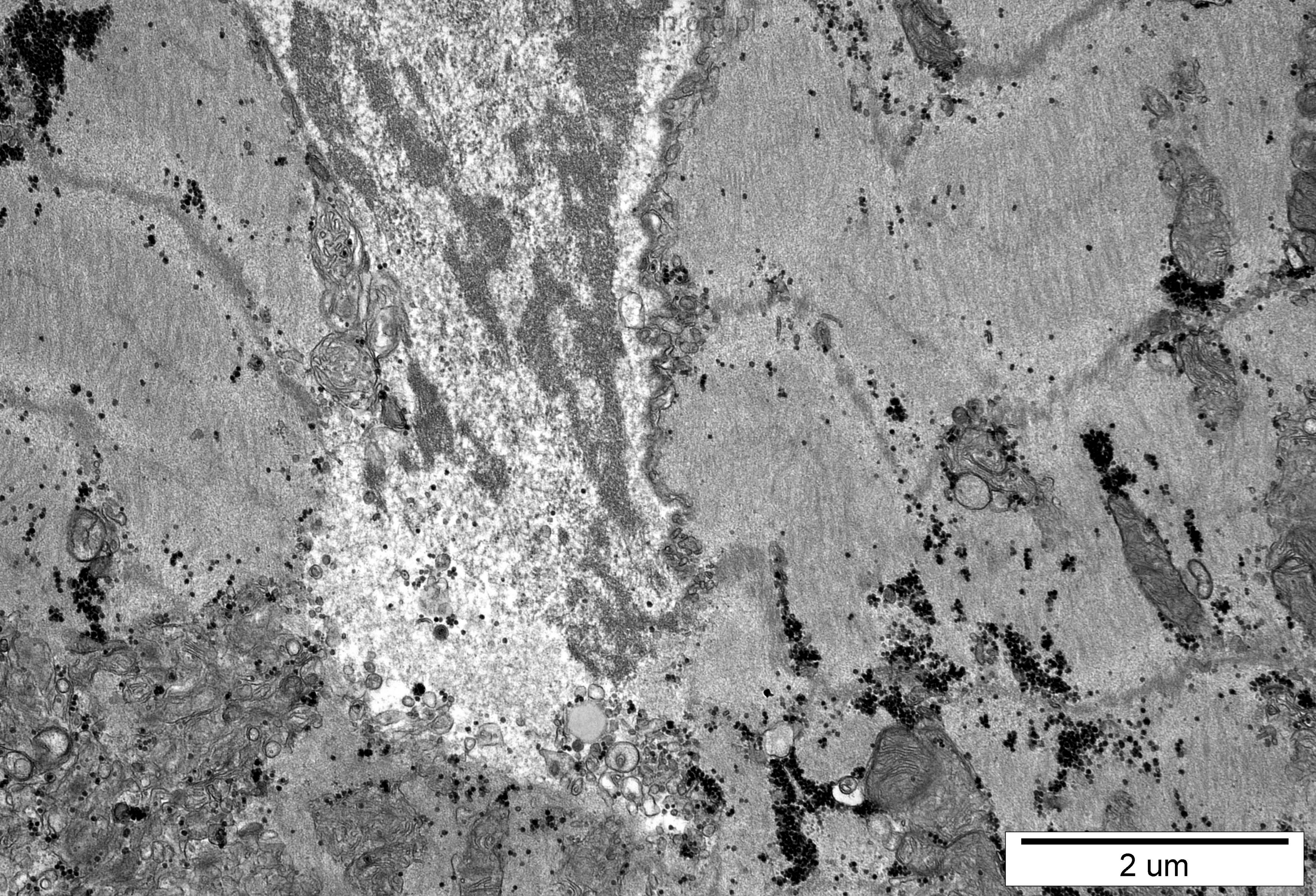
1 um





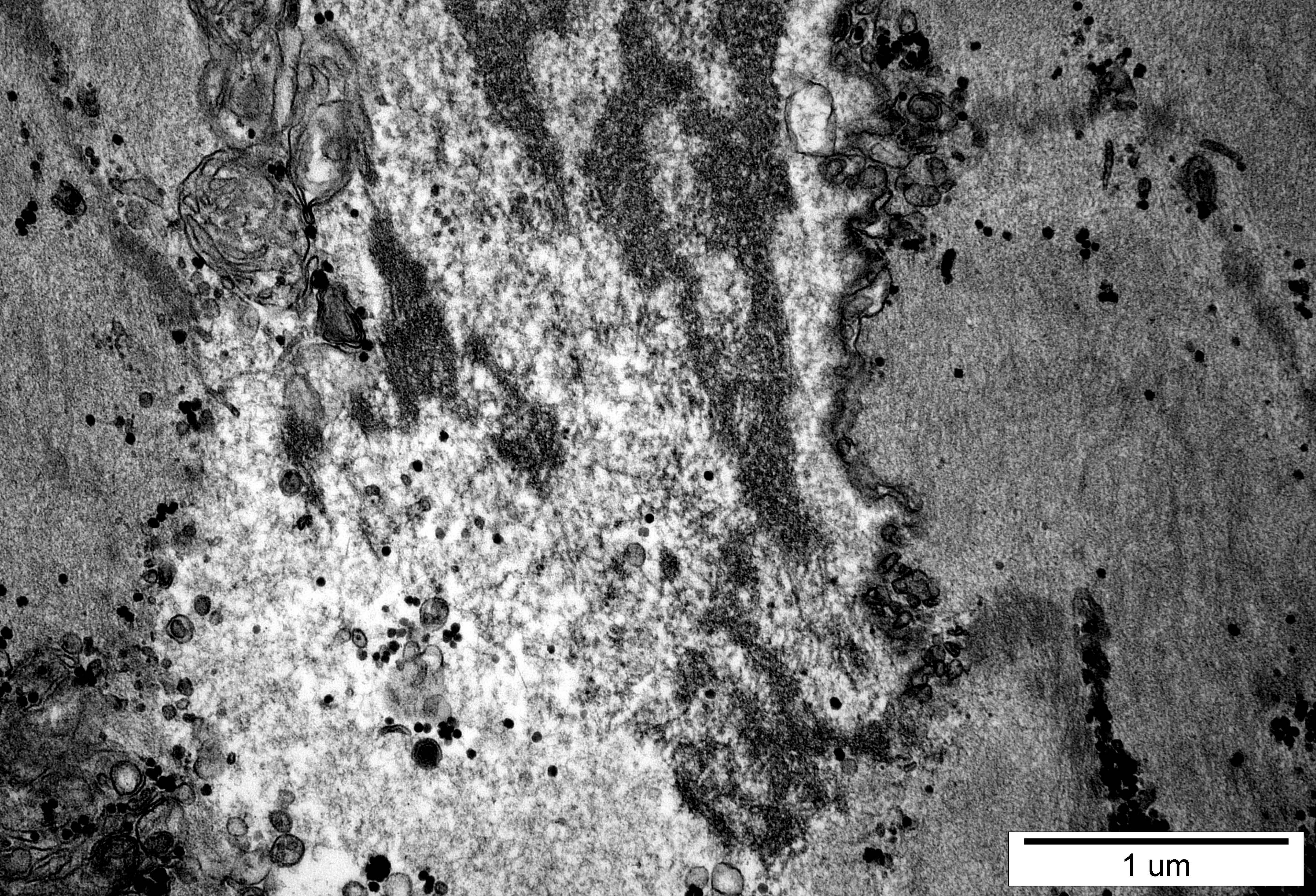
1 um





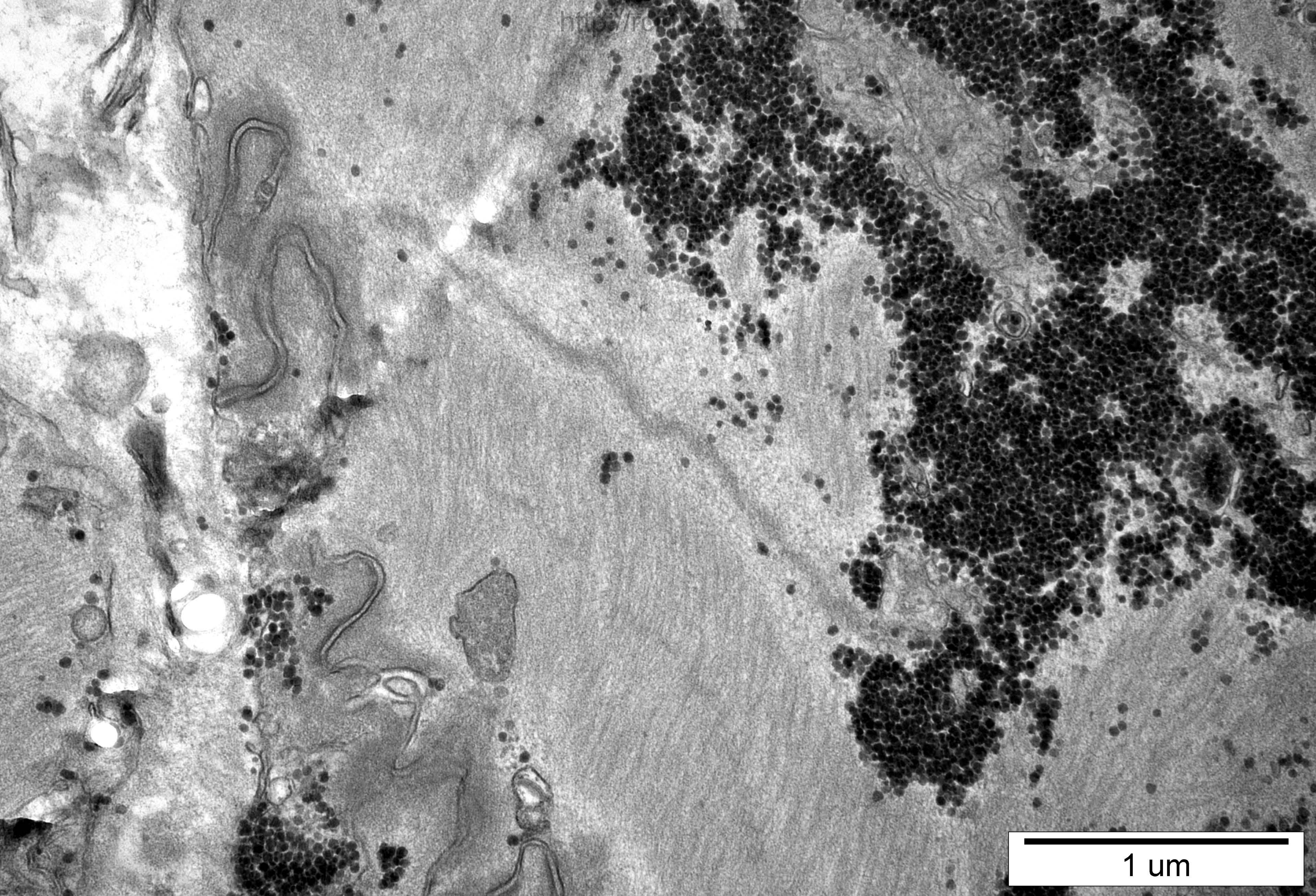
2 um





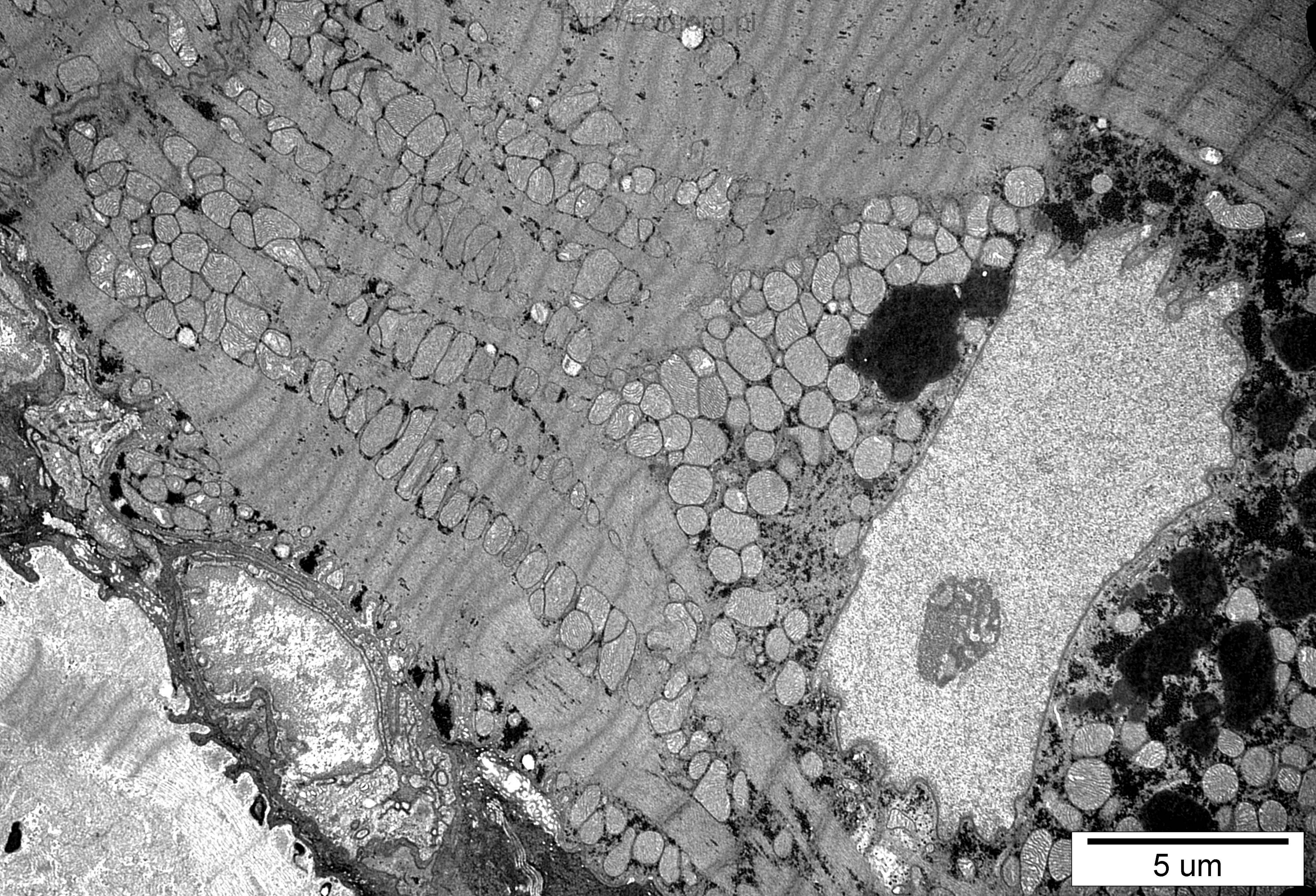
1 um





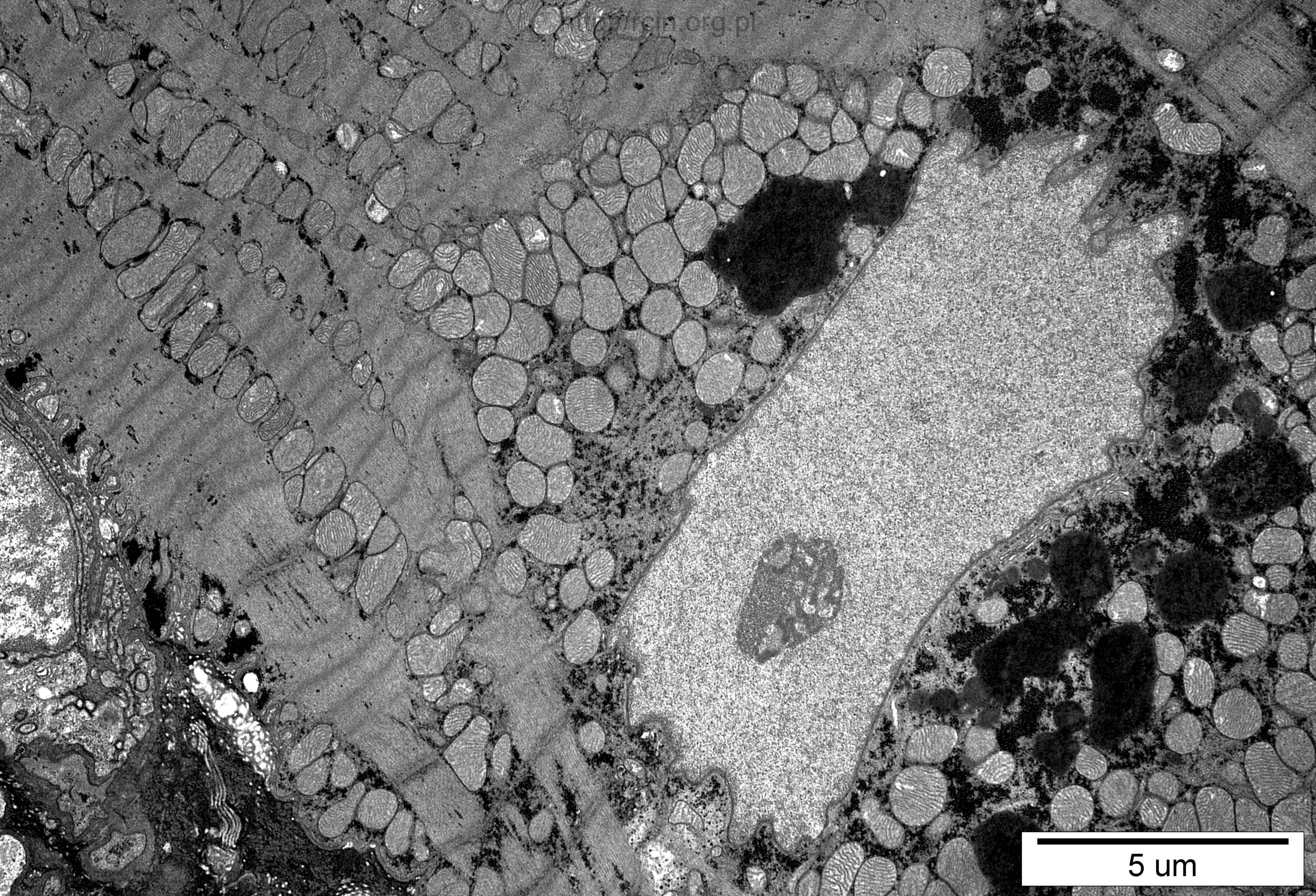
1 μm





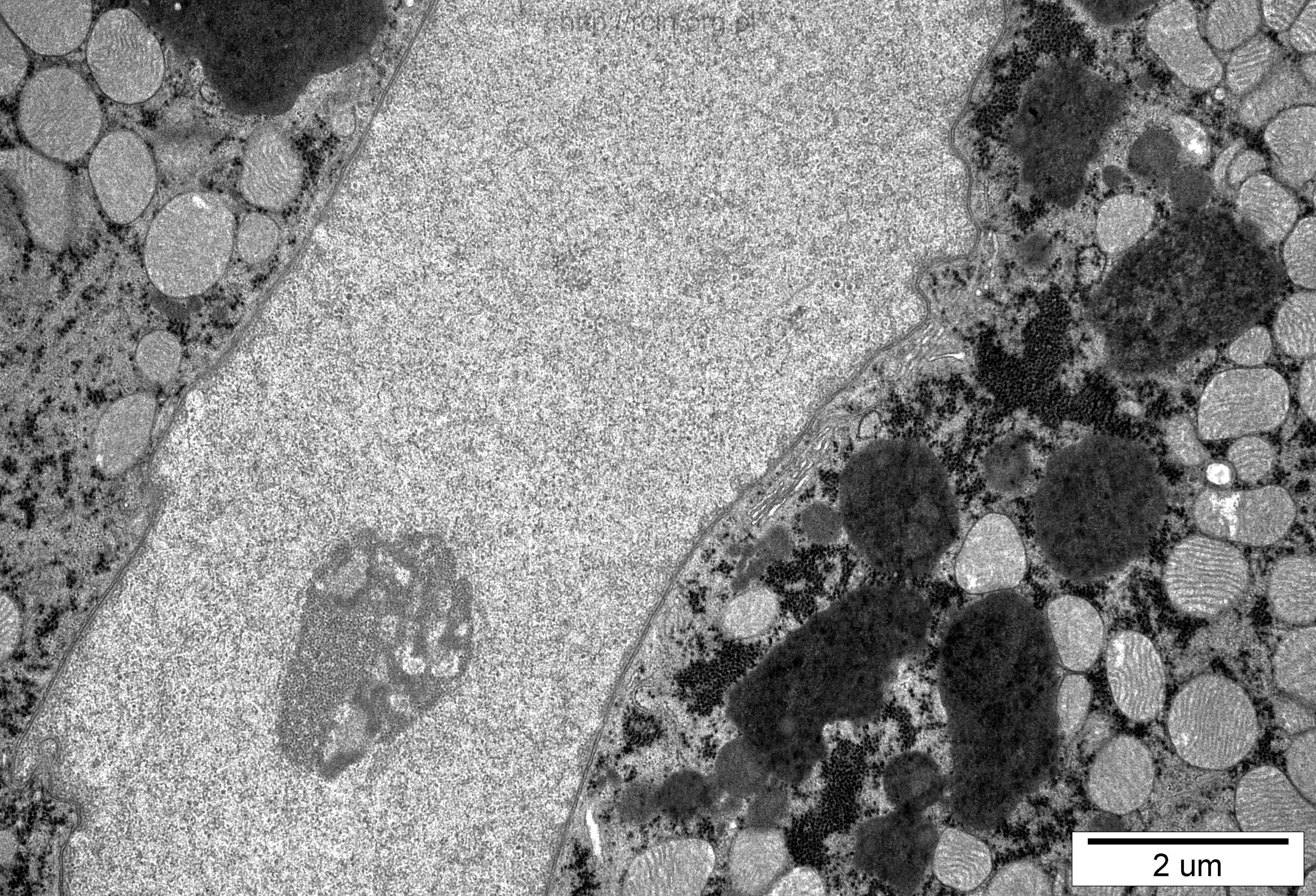
5 μm





5 μm



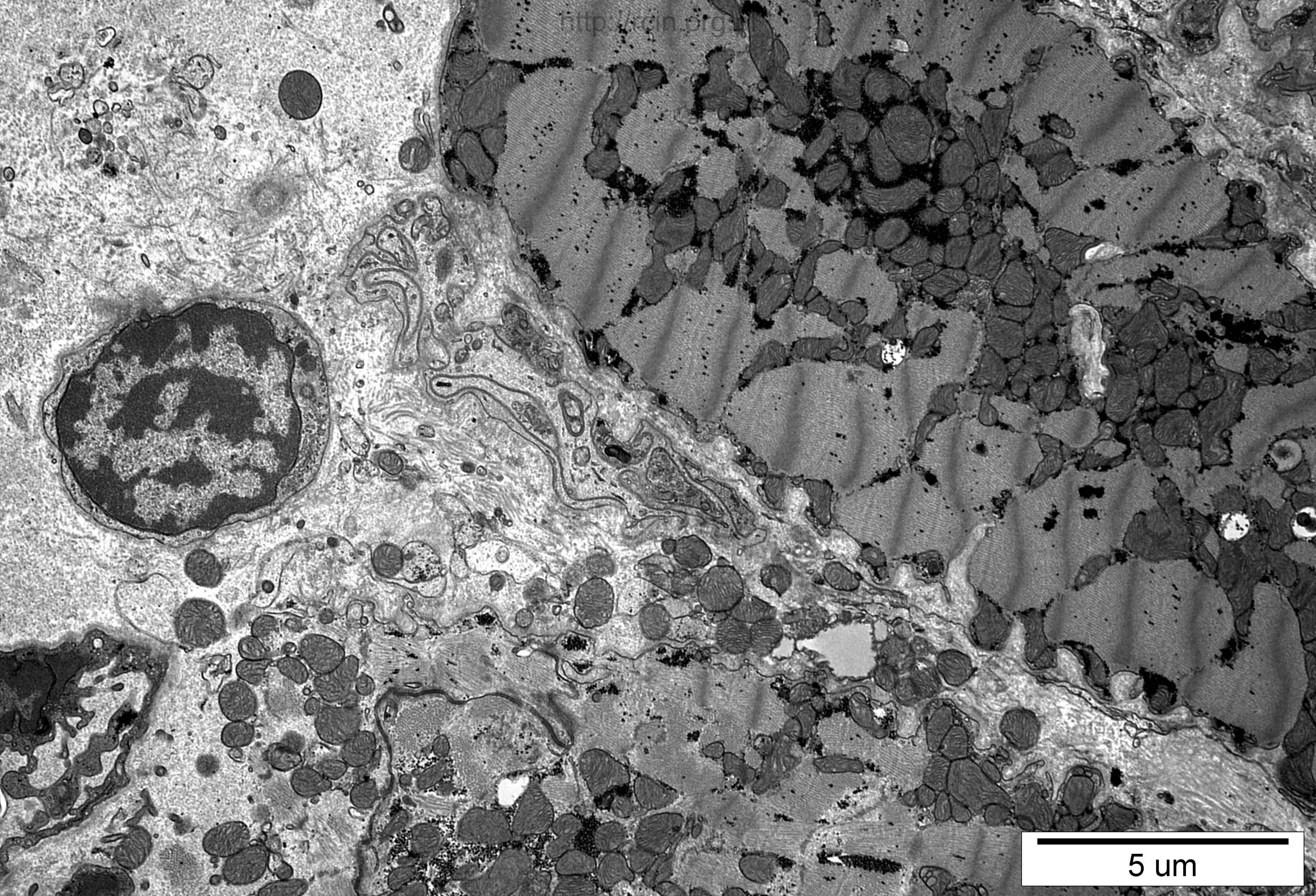


2 um









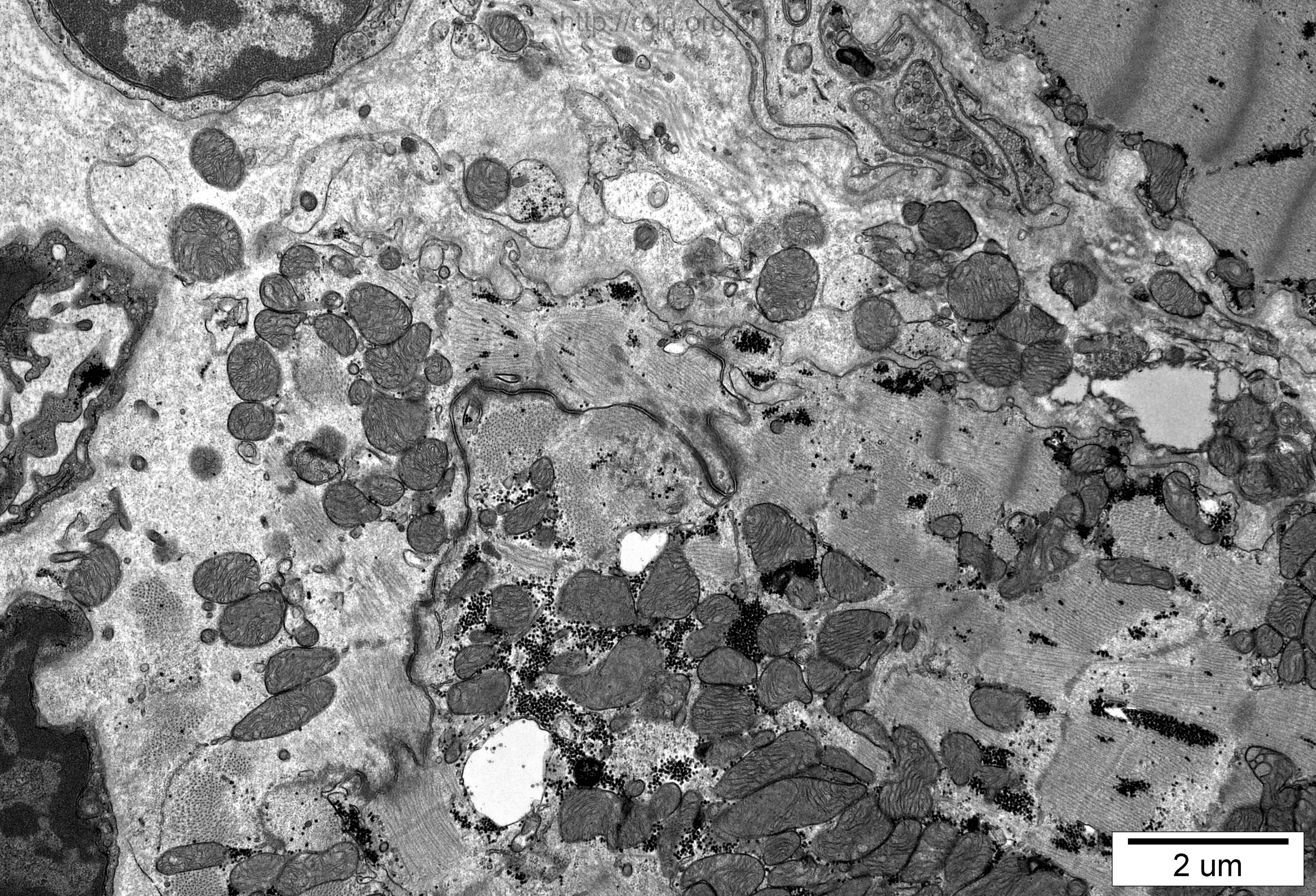
5 μm





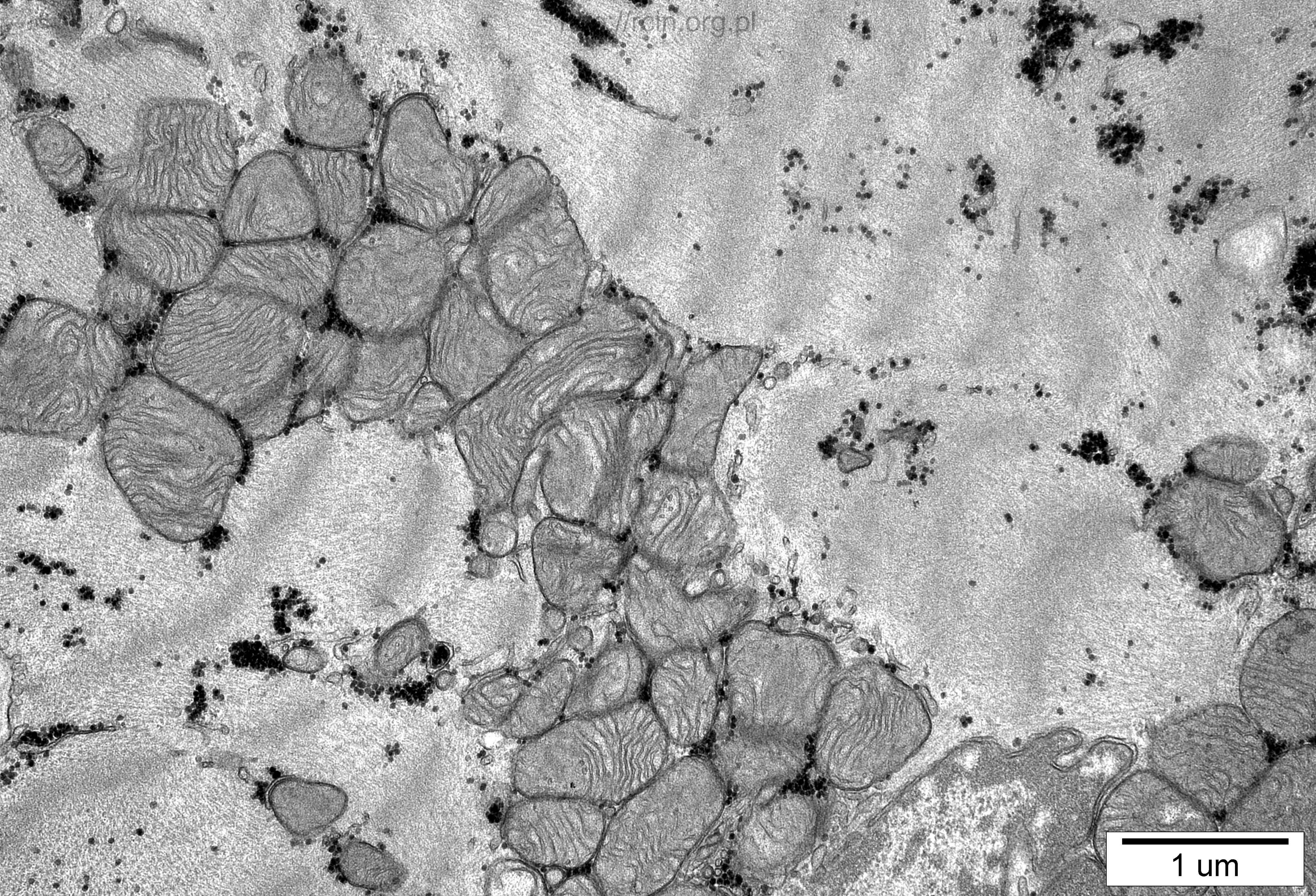
2 μm





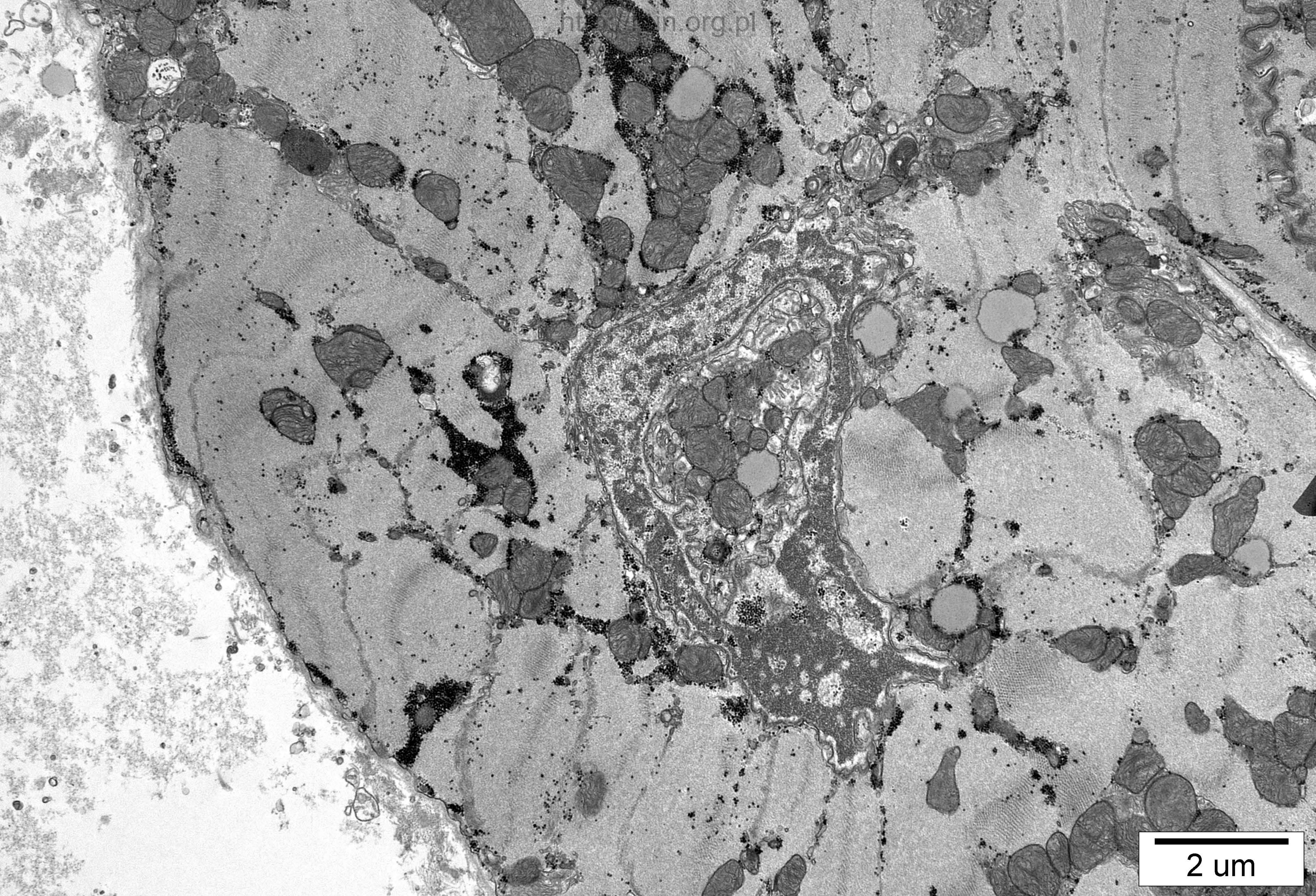
2 um





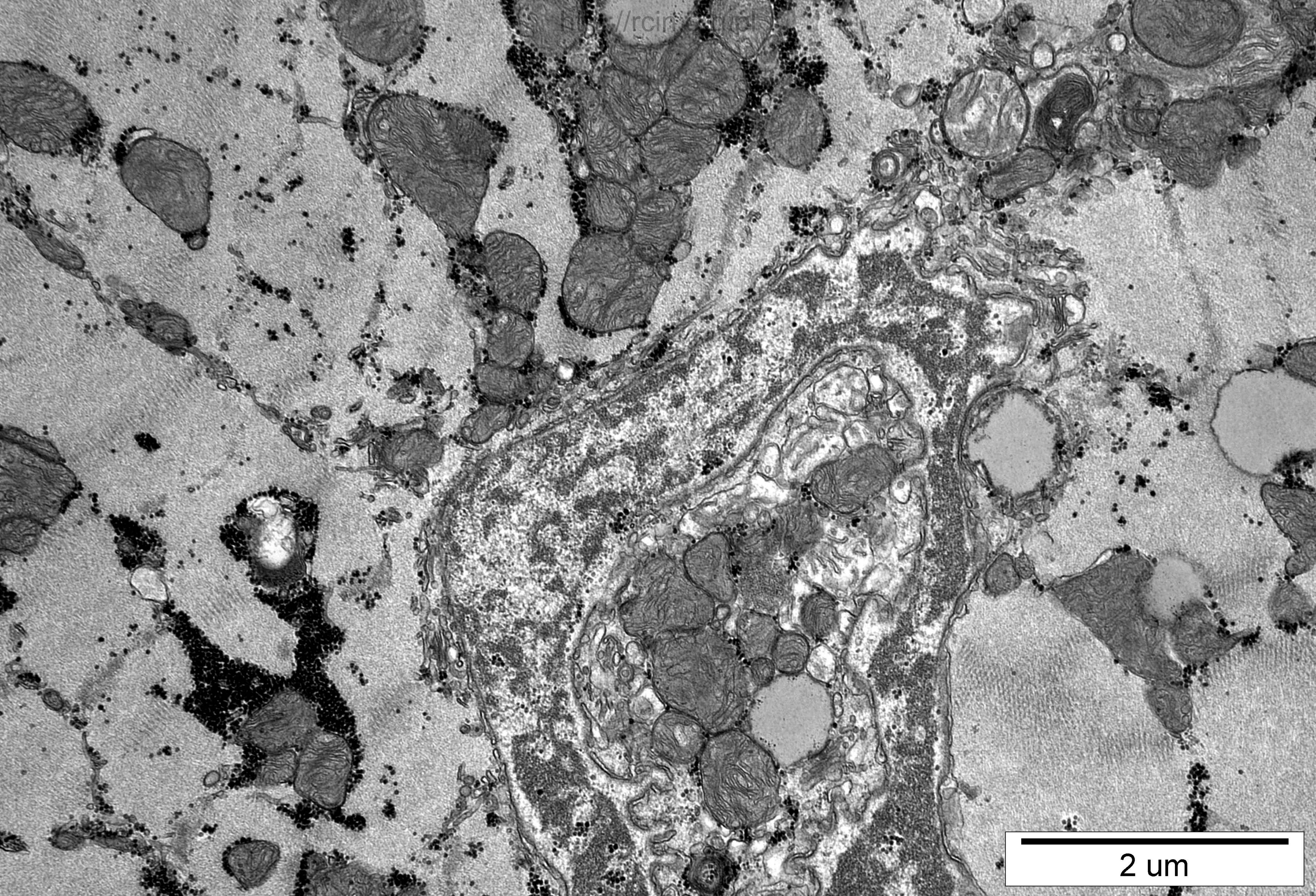
1 um





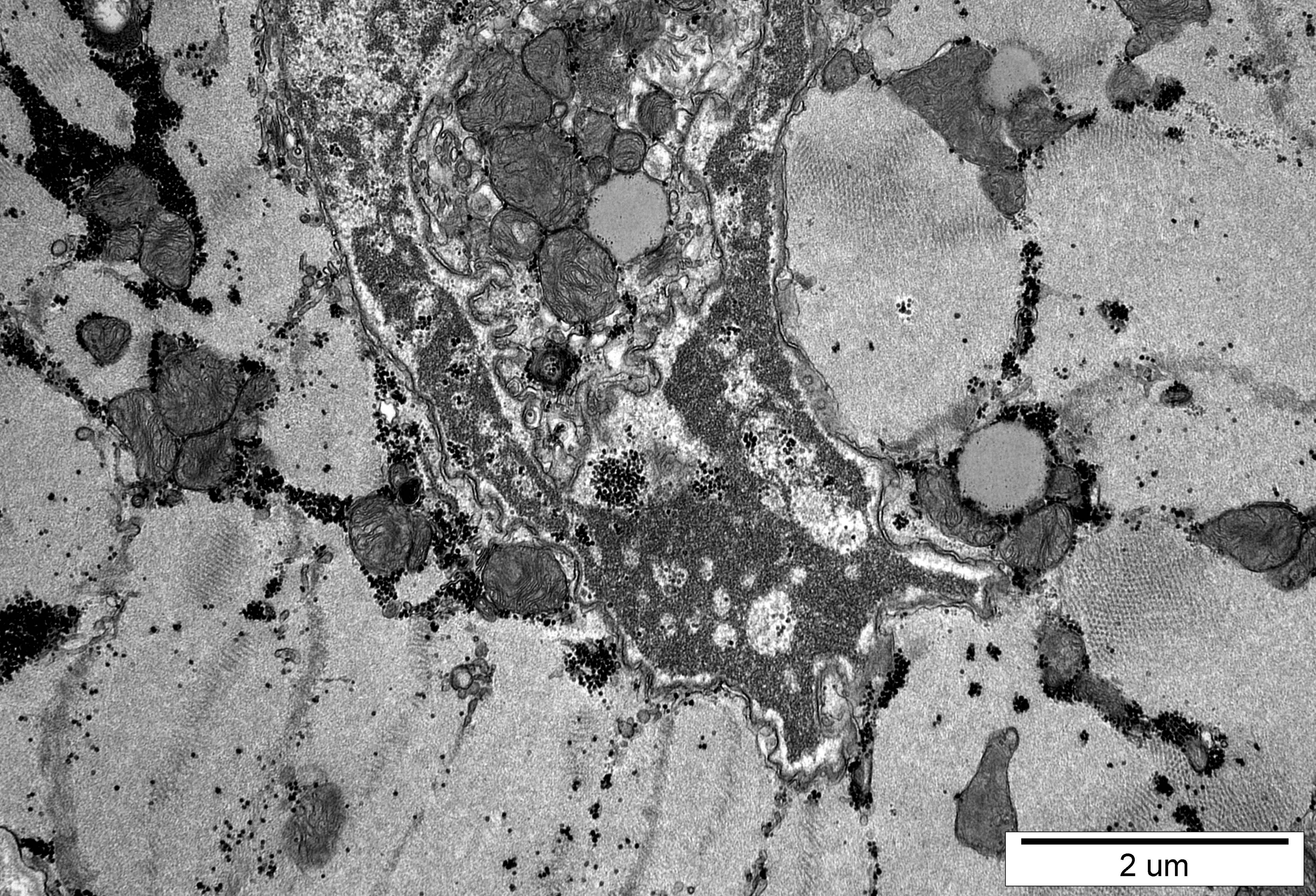
2 um





2 μm





2 μm



12474-8

Ocena ultrastrukturalna ujawniła zaburzenia w układzie sarkomerów i ich zatartą strukturę jednak nie obserwowano ubytku miofibryli (Fig. 12474-8-1, 8, 28). Większość jąder kardiomiocytów miała prawidłową budowę ultrastrukturalną, położona była ośrodkowo, a w ich okolicy obserwowano liczne lipofuscyny (Fig. 12474-8-18, 20, 11). Nieliczne jądra wykazywały nieprawidłowości - położone były podbłonowo (Fig. 12474-8-3) lub wykazywały pęknięcia w błonie jądrowej (Fig. 12474-8-15). Widoczne były dość liczne krople lipidów (Fig. 12474-8-2). Obecne były prawidłowe mitochondria o zachowanych grzebieniach (Fig. 12474-8-25) jak i mitochondria o zatartej strukturze błon mitochondrialnych i grzebieni lub częściowo ich pozbawione (Fig. 12474-8-10, 5, 6). Wstawka (intercalated disc) wykazywała regularny przebieg i miejscami rozmytą strukturę (Fig. 12474-8-13, 14, 24). W przestrzeni zewnątrzkomórkowej widoczna była obfita tkanka łączna (Fig. 12474-8-12).

Ultrastructural evaluation revealed changes in sarcomere pattern and their blurred structure however no loss of myofibrils was observed (Figs. 12474-8-1,8,28). Most of the cardiomyocytes' nuclei showed normal ultrastructure and were centrally located. Numerous lipofuscin was observed in their vicinity (Figs. 12474-8-18,20,11). Few nuclei revealed abnormalities - they were located sub-membranously (Fig. 12474-8-3) or had breaks in the nuclear membrane (Fig. 12474-8-15). Quite numerous lipid droplets were visible (Fig. 12474-8-2). Unaltered mitochondria with preserved cristae (Fig. 12474-8-25) as well as mitochondria with blurred structure of mitochondrial membranes and cristae or partially lacking them (Figs. 12474-8-10,5,6) were present. Intercalated disc showed a regular course and a blurred structure in some parts (Figs. 12474-8-13,14,24). Abundant connective tissue was visible in the extracellular space (Fig. 12474-8-12).