## **Supporting Information Table S1**

Results of segmentation analysis of confocal micrographs

(For details of image acquisition and analysis see the main text: Materials and Methods and the first Section of Results).

Confocal micrographs	Number of branching nodes of degree $k^*$				Number of segments**		Niverban of
	<i>k</i> = 3	<i>k</i> = 4	<i>k</i> = 5	<i>k</i> = 6	in the largest cluster	total	Number of clusters***
Image 1	718	180	23	4	351	580	65
Image 2	1245	256	28	2	255	1142	252
Image 3	834	163	5	1	202	746	155
Image 4	488	91	5	2	28	591	238
Image 5	258	42	1	0	70	242	54
Image 6	3622	737	26	3	1893	2698	252
Image 7	493	100	5	3	146	602	253

<sup>\*</sup> Degree of a node is defined as number of edges connecting this node to the rest of the network.

<sup>\*\*</sup> A mitochondrial *segment* is defined as one or more network edges connected only through bulk sites (nodes of degree 2).

<sup>\*\*\*</sup> A *cluster* is defined as a detached set of interconnected segments. The network of cellular mitochondria consists of a set of clusters.