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The study of cells has led to many inventions. However, one of the things that is yet to be exclusively alaysed is the underlying preotein in the mitochondrian intake of calsium (Bernardi, Rasola, 2007). A survey done in 2010 brought the matter close to conclusion. Below is a pictorial representation of MICU1 that has been used for survey and which is the basis for many urguments.

The mitochondrion has two membranes; the outer and the inner membrane. As evident in the above figure, the MUCU1 is attached to the inner membrane. This makes it essential in sensing of calcium in the membrane. Calcium intake is an important stage in cell physiology (Santo-Domingo, Demaurex, 2010). The first recordings of this important part of cell physiology were done in mid twentieth century. The continued study has shown that, MICU1 has an ability to let mass passage calcium across the inner membrane and hold it in there. The availability of calcium in the mitochondrion is therefore highly dependent on MICU1 (Balaban, 2009).

The effect of MICUI is proved to have direst effect on various physiological factors. These factors range from cell secretion to differentiation (Gunter, Gunter, 1994). However, the retention of the large amount of unwanted calcium in the mitochondrion may at times have counter effects. This is because it may cause the mitochondrion to burst which is not healthy. While the inner alls of the mitochondrion are elastic in nature, the outer membrane is rigid and thus when pushed may burst. This scenario of mitochondrion bursting is not common (Kirichok, Krapivinsky, Clapham, 2004). The high level of activity in the cell ensures that calcium is assimilated fast.

The ability of cytosolic calcium has been found not to be utterly affected even when MICU1 is silenced (Hajnoczky, Robb-Gaspers, Seitz, & Thomas, 1995). However, the intake becomes slow thus most of the physiological functions are also slowed (Paragna, Gunter, Sheu, Gunter, 1995).

## References

Balaban, R., S., (2009). The role of Ca (2+) signaling in the coordination of mitochondrial ATP   
production with cardiac work. New York Biochim Biophys Acta   
(http://www. ncbi. nlm. nih. gov/pmc/articles/PMC3177847/)   
Bernardi., P., Rasola, A., (2007). Calcium and cell death: the mitochondrial connection. London:   
Subcell Biochem. (http://www. ncbi. nlm. nih. gov/pubmed/18193649)   
Fabiana Perocchi et al. (2010). MICU1 encodes a mitochondrial EF hand protein required for   
Ca2+ uptake. New York: PMC   
(http://www. nature. com/nature/journal/v467/n7313/full/nature09358. html)   
Gunter K., K., Gunter, T., E., (1994). Transport of calcium by mitochondria. New York: J   
Bioenerg Biomembr. (http://www. ncbi. nlm. nih. gov/pubmed/7896763)   
Hajnoczky, G., Robb-Gaspers, L., D., Seitz, M. B., & Thomas A., P., (1995). Decoding of   
cytosolic calcium oscillations in the mitochondria. New York Biochim Biophys Acta   
(http://www. ncbi. nlm. nih. gov/pubmed/7634331)   
Kirichok, Y., Krapivinsky, G., Clapham, D., E., (2004). The mitochondrial calcium uniporter is   
a highly selective ion channel. New Jersey: Nature.   
(http://www. ncbi. nlm. nih. gov/pubmed/14737170)   
Santo-Domingo, J., Demaurex, N., (2010). Calcium uptake mechanisms of mitochondria.   
Canada: Biochim Biophys Acta. (http://www. ncbi. nlm. nih. gov/pubmed/20079335)   
Sparagna, G., C., Gunter, K., K,, Sheu, S., S., Gunter, T., E., (1995). Mitochondrial calcium   
uptake from physiological-type pulses of calcium. A description of the rapid uptake mode.   
New York: J Biol Chem. (http://www. ncbi. nlm. nih. gov/pubmed/7499209)