H Seda Vatansever et al., J Cancer Sci Ther 2015, 7:8
http://dx.doi.org/10.4172/1948-5956.C1.057

OMICS International
conferenceseries.com

5th World Congress on
Cancer Therapy

September 28-30, 2015 Atlanta, USA

Nanotubes and their functions in cancer

H Seda Vatansever[1,2] and **Kivanc Gorgulu**[3]
[1]Celal Bayar University, Faculty of Medicine, Department of Histology-Embryology, Turkey
[2]Research Center of Experimental Health Science, Near East University, North Cyprus
[3]Klinikum rechts der Isar, Technischen Universität München, II. Medizinische Klinik und Poliklinik, Germany

Since Rustom et al have shown formation of tunneling nanotubes (TNT) and published in Science journal in 2004 afterward this topic became crucial in forms of intercellular communication. These formations have been called as tunneling nanotubes because of their diameter is around 50-200 nm and these nanotubes may easily move throug extracellular matrix to reach and communicate with other cells. TNTs are formated by F-Aktin polymerization in small tubes. On the other hand, in bigger tubes microtubul association has been observed during polymerization of F-Aktin. In time, there are some papers about tunneling nanotubes which have been published about normal and cancer cells. Especially, Ohno et al have shown that M-Sec is a central player of TNTs in Nature Cell Biology journal. This study presents that M-Sec protein also helps to formate protrusions of membrane as a marker of TNT.

We hypothesize that M-Sec protein, central player of TNT formation, is overexpressed in these cancer cells which have overexpression of RalA. In this study, we aim to investigate roles, importance and difference of TNTs in primary and metastatic cancer cell lines.

After WGA staining, there was TNT in metastatic colon (Colo-741) and breast (M4A4) cell lines. Nanotubes tunnelings were observed both the neighboring and cell colonies of metastatic colon and breast cancer cell lines have been identified. While RalA, RalB, RalAA/B and connexin-43 immunoreactivity were similar in both primer and metastatic colon and breast cancer cells, M-sec staining of colo-741 was found to be higher in the metastatic cell line. The results of Western blot analysis did M4A4 M-Sec in the metastatic group were also found to be higher than the Colo-741.

Nanotubes tunnelings were observed especially in metastatic cancer cell lines (Colo-741, M4A4), and their presence in metastatic cell may be important for to propagation and survival of the cells can be achieved by the presence of TNTs and new approaches in the patient samples for treatment by testing the presence of TNT was concluded.

Biography

Seda Vatansever has completed her PhD at the age of 31 years from Liverpool University and all academic studies from Celal Bayar University School of Medicine. She has published more than 80 papers in reputed journals and has been serving as an editorial board member of repute. She interest in cancer cell biology, apoptosis, stem cell (both embryonic and mesenchymal) culture and differentiation, oocyte culture.

hsedav@yahoo.com

Notes: