

World Congress on

# Human Genetics

November 07- 08, 2016 Barcelona, Spain

## Role of *TSGA10* gene in angiogenesis and tumor metastasis: What is the link?

Kamran Mansouri, Ali Mostafae, Davood Rezazadeh, Mohsen and Mohammad Hossein Modarressi  
Medical Biology Research Center, Iran

Several studies have shown that testis-specific gene antigen (*TSGA10*) could be considered as a cancer testis antigen (CTA), except for one study which has identified it as a tumor suppressor gene. In order to exert its function, *TSGA10* interacts closely with hypoxia inducible factor (HIF-1 $\alpha$ ) and since this interaction is still not completely defined, the exact role of *TSGA10* in angiogenesis and invasion is also under question. The current study was conducted to investigate the function of *TSGA10* gene and evaluate its potential effects on tumor angiogenesis and invasion. To do so, *TSGA10* vector was designed for a stable transfection in HeLa cells and then clonal selection was applied. The efficiency of transfection and the role of *TSGA10* in above mentioned targets were evaluated by real-time PCR, western blot, zymography and ELISA tests in both normoxia and hypoxia. Invasion, migration and angiogenesis were assessed. Three-dimensional model of *TSGA10* protein was accurately built in which *TSGA10* docked to 2 domains of HIF-1 $\alpha$ . Increased expression of *TSGA10* correlated with decreased HIF-1 $\alpha$  transcriptional activity and inhibited angiogenesis and HeLa cells invasion in normoxia as well as hypoxia. Docking analysis indicated that binding affinity of *TSGA10* with TAD-C (CBP) domain of HIF-1 $\alpha$  would be stronger than that with PAS-B domain. Our findings showed that overexpression of *TSGA10* would induce disruption of HIF-1 $\alpha$  axis and exert potent inhibitory effects on tumor angiogenesis and metastasis. Therefore, *TSGA10* could be considered as a potent therapeutic candidate, prognostic factor and a cancer management tool.

### Biography

Kamran Mansouri has completed his PhD in Molecular Medicine from Tehran University of Medical Sciences, Iran. He is the Head of Angiogenesis Department of Medical Biology Research Center. He has published more than 34 papers in reputed journals.

kmansouri@kums.ac.ir

### Notes: