



# Glioblastoma and Cholesterol Metabolism Pathway

## SEMINAR & VISITING SPEAKER SERIES

### DATE

Friday, January 25, 2019  
9:00AM

### LOCATION

PX236/238 PscyHealth Building

### SPEAKER

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### BIO

Saeid Ghavami got his BSc. in Chemistry in 1989 (Shiraz University, Shiraz, Iran), MSc. and PhD (1995, 2004, TMU University, Tehran, Iran) in Clinical Biochemistry. His Postdoctoral training was focused on the application of apoptosis/autophagy/unfolded protein response (UPR) in regulation of cell fate. His research program is focused on regulation of cellular phenotype via targeting autophagy and unfolded protein response in the Department of Human Anatomy and Cell Science, University of Manitoba, He has been the recipient of a number of prestigious awards including CIHR/GSK/CLA postdoctoral award (No #1 in Canada, 2007), Parker B Francis Career Development Award (top 10 in North America, 2009), ATS Science and Innovation Center Rising Star of Research Award (2017), CIHR/CCS/OICR Early Career Research Award (2017). He has published more than 150 peer reviewed article (google scholar: >12,800 citation, h-index 40) (scopus > 7800 citations, h-index 33).

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Temozolomide (TMZ) is chemotherapeutic agent for treatment of Grade IV Astrocytoma, otherwise known as Glioblastoma multiforme (GBM). TMZ treatment causes DNA damage and results in tumor cell apoptosis. TMZ also induces autophagy and causes tumor cell resistance and thus fails to improve the survival rate among patients. Statins are competitive inhibitors of the rate determining enzyme of the mevalonate (MEV) cascade and best known for their cholesterol (CH) lowering effect. Recently, it was reported that long-term consumption of statins, prior to and in parallel with other cancer therapeutic approaches, increased the survival rate of patients with various forms of cancers. In this talk, I present our latest investigation about the mechanisms of the potentiation of TMZ-induced apoptosis by MEV cascade inhibitor (cholesterol biosynthesis pathway) (simvastatin) (Simva) in human GBM cell lines and in primary human GBM cells in both cell monolayers and in three-dimensional (3D) cell culture systems.

### OBJECTIVES

1. The attendee will learn the concept of Cholesterol biosynthesis pathway and its possible effect in glioblastoma new therapy strategies.
2. The participant will learn concept of autophagy pathway.
3. The participant will understand how autophagy is involved in regulation of apoptosis.
4. The participant will learn the principal of glioblastoma 3D culture model.