

Project title: Developing nanodrugs delivery system to enhance the therapeutic effects on brain cancer

Program title: Developing nanodrugs delivery system to enhance the therapeutic effects on brain cancer

Overcome the Temozolomide-resistant human glioblastomas cells: From clinical to bench

Dueng-Yuan Hueng^{1,2,3}, I-Ping Wu², Li-Chung Huang², Hsin-Ying Clair Chiou⁴,
Jen-Kun Chen⁵, Chung-Shi Yang⁵

洪東源，吳依屏，黃莉淳，邱馨瑩，陳仁焜，楊重熙

¹Department of Neurological Surgery, Tri-Service General Hospital, ²Department of Biochemistry, National Defense Medical Center, Taipei, Taiwan, ³Superintendent Office, Penghu Branch of Tri-Service General Hospital, National Defense Medical Center, Magong City, Penghu County, Taiwan, ⁴Division of Endocrinology and Metabolism, Department of Internal Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan, ⁵Institute of Biomedical Engineering and Nanomedicine, National Health Research Institute, Taiwan

Human glioblastomas are characterized with high mortality due to the resistance to clinical standard therapeutic practice. The purpose of this study is to characterize the Temozolomide-resistant (TMZ-R) and -sensitive (TMZ-S) clones for translational study. Our study found that high expression of methylguanine methyltransferase (MGMT) contributed to high mortality. Moreover, TMZ-resistant clone highly expressed MGMT. We further characterize the gene expression profile between TMZ-R and TMZ-S clones using gene array. Next, we found novel method to re-sensitize the TMZ-R human glioblastomas. Taken together, our findings provide the future clinical trial perspectives in improvement of survival of human glioblastomas.