J Clin Exp Pathol 2018, Volume 8
DOI: 10.4172/2161-0681-C5-058

The 14F7 Monoclonal Antibody: Past, present, and future for theragnosis in cancer

Angel Casaco
Center for Molecular Immunology, Cuba

The relevance of certain gangliosides in tumor growth and metastatic dissemination has been well documented. GM3 (NeuGc) ganglioside is particularly interesting due to its restrictive expression in normal human and chicken tissues. On the other hand, previous studies have shown that 14F7 Mab (IgG1) is a very specific anti-NeuGcGM3 ganglioside inducing cell death accompanied by cellular swelling, membrane lesion formation, and cytoskeleton activation, suggesting an oncosis-like novel phenomenon. The fact that the 14F7 Mab is able to very specific recognize in vitro and in vivo by IHC and immune gammagraphy studies the P3X63 murine myeloma cell line, the spontaneous epithelial chicken ovarian cancer and the human breast cancer that over-express the GM3 (NeuGc) ganglioside makes this Mab an important tool with anti-proliferative anti-tumor effects in vitro and in vivo animal models. A dose-escalation Phase I clinical trial is ongoing in Cuba with the humanized 14F7 Mab for studying the pharmacokinetics, toxicity and any evidence of anti-tumor effect in solid tumors over-expressing the GM3 (NeuGc). These two properties, the very specificity for recognizing tumors that over-express this ganglioside and its capability to have anti-tumor effect make this Mab an ideal drug for personalized medicine and teragnosis of cancer patients over-expressing the GM3 (NeuGc) ganglioside.

casaco@cim.sld.cu

Notes: