Gregory Lee, Endocrinol Metab Syndr 2015, 4:4
http://dx.doi.org/10.4172/2161-1017.C1.008

OMICS International
conferenceseries.com

3rd International Conference on
Endocrinology
November 02-04, 2015 Atlanta, USA

Anti-GNRH receptor monoclonal antibodies as bioequivalent analogs of GNRH

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GHR106 Monoclonal Antibody (Mab) was generated against the extracellular domain (N1-29) of the GnRH receptor and belongs to a new class of bioequivalent long-acting GnRH analogs. Through various biological and immunological studies, it was revealed that Mabs in both murine (mGHR106) and humanized (hGHR106) forms have comparable specificity and affinity to intact GnRH receptor on cancer cells and to N1-29 synthetic peptides from humans and monkeys. By Terminal Deoxynucleotidyl Transferase dUTP Nick End Labeling (TUNEL) assay, both Mabs were shown to act in a similar manner to the decapeptide GnRH antagonist, Antide, in inducing apoptosis of cultured cancer cells from various tissue origins. Furthermore, both mGHR106 and hGHR106 were shown to induce Complement-Dependent Cytotoxicity (CDC) reaction to cancer cells, an immune property which is not shared by decapeptide GnRH analogs. Through semi-quantitative polymerase chain reaction both GHR106 and its humanized forms were revealed to be bioequivalent to antide in terms of their respective effects on the expression of genes related to cell proliferation and apoptosis. In addition, GHR106 Mabs demonstrate a longer circulating half-life than GnRH peptide analogs (days vs. hours). Therefore, based on the results of these studies, it can be concluded that both mGHR106 and hGHR106 are bioequivalent to the GnRH decapeptide antagonist, Antide, and can serve as a long-acting alternative to current GnRH decapeptide antagonists for applications in cancer immunotherapy and for fertility regulations.

Biography

Gregory Lee completed his PhD from the California Institute of Technology and his Post-doctoral studies at the University of California, San Diego. He became a Full Professor at the University of British Columbia and retired with the title of Professor Emeritus. He is the Co-Founder of Vancouver Biotech Ltd. He has published more than 200 papers, including 30 papers in cancer research. He has been serving as an Editorial Board Member of the Journal of Carcinogenesis and Mutagenesis, and the *Journal of Cancer Science and Therapy.*

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