Hereditary Genetics: Current Research
ISSN: 2161-1041
2020
Vol.9 No.2

A Novel Versatile Antibody-Drug Conjugate for Cancer Therapy

Chuan-Lung Hsu

Development Center for Biotechnology, Taiwan

Abstract

Antibody drug conjugates (ADCs), a promising next generation antibody drug, combine tumor specificity with highly potent cytotoxic payload for improve therapeutic efficacy in cancer therapy. However, due to the manufacture issues and producing heterogeneous products of random conjugation of ADCs, here we report a highly efficient glycogengineering technology by using a GnT-I (N-Acetyl glucosamine transferase I) and a GnT-II (N-Acetyl glucosamine transferase II) as enzymes to conjugate a tri-mannosyl core antibody and produce an versatile ADC. Our results show that a homogenous tri-mannosyl Herceptin-2(GlcNAc-triazole-DBCO-(PEG)4-DM1)-2(GlcNAc-triazole-DBCO-PEG4-Vc-PAB- (PEG)2-Duocarmycin) is generated with the conversion efficiency over 90% and 50% recovery rate. The results indicate that the tri-mannosyl ADC has not only with highly potent cytotoxicity (IC50<1.2 nM) than Kadcyla, but also with better anti-tumor growth activity in BT-474 and N87 xenograft (TGI>90%).

Biography:

Dr. Hsu has completed his PhD at 2010 from National Tsing Hua University in Taiwan. He is now the Research fellow of Development Center for Biotechnology, a non profit-making organisation sponsored by the Technology Development Program of Taiwan's Ministry of Economic Affairs. He has published many papers in reputed journals and is the inventor of more than 5 granted patents in biotechnology applications

24th European Biotechnology Congress; September 23-24, 2020, Webinar

Abstract Citation:

Chuan-Lung Hsu, A Novel Versatile Antibody-Drug Conjugate for Cancer Therapy; Euro Biotechnology 2020, 24th European Biotechnology Congress; September 23-24, 2020 Webinar

https://www.biotechnologycongress.com/europe/speaker/2020/chuan-lung-hsu-development-center-for-biotechnology-taiwan-1723978460