

Abstract

Triple negative breast cancer is a subtypes of breast cancer that are known to have a bad prognosis and spread faster. TNBC tends to have bad prognosis due to the absence of the ER, PR, and HER receptors on the surface of the cells. These absent of receptor cause a limitation for treating them, Additionally, several drugs were proposed as a treatment for TNBC but administration of a single drugs could cause a condition called drug resistance. The objective of this was to study drug dose combinations in spheroid TNBC cell lines (MDA-MB-231) using OACD design. For this experiment, there were four main parts that were done including culturization of spheroid, determination of single drugs, drug combination using OACD design and last is validating data using linear regression algorithm models. From our finding it shows that Saracatinib to have a better potency and highest ability for inhibiting the migration of spheroid in a single drug dose experiment. Additionally comparing the result from the OACD design and drug combination results it shows that Saracatinib and BIO have a place in drug combination that is significantly showing good results. However, using the linear regression algorithm, it shows that a single administration of Gefitinib, Panobinostat or Rocilinostat are able to inhibit the migration of spheroid. In conclusion, this study shows that administration of Gefitinib itself shown to be promising as a drug treatment for TNBC.

Keywords: TNBC; Drug Combination; OACD; Linear Regression; Algorithm