# Aktivitas sitotoksik derivat asam galat terhadap karsinoma sel skuamosa serviks hela = Cytotoxic activity of gallic acid derivatives to cervical squamous cell carcinoma hela

Liwang, Ferry, author



---

Abstrak

Kanker serviks merupakan kanker ketiga tersering pada perempuan dan kelima tersering di dunia. Hingga saat ini, terapi kanker serviks masih memiliki efek samping dan komplikasi masih tinggi, serta efektivitas pada stadium lanjut masih rendah sehingga menyebabkan perlunya pengembangan terapi yang lain. Asam galat diketahui sebagai antikanker yang potensial. Modifikasi struktur gugus alkil akan mengubah sifat farmakokinetik dan farmakodinamik senyawa. Studi ini menilai aktivitas sitotoksik derivat asam galat. Inhibition concentration (IC50) derivat asam galat dinilai pada sel HeLa. Sel diberikan asam galat atau derivatna dengan jumlah minimal 1x104 sel/ well dengan konsentrasi berkisar antara 0.4 ? 51,2 g/ml selama 48 jam. Setelah itu, viabilitas sel dinilai menggunakan MTS (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium) assay. Hasil menunjukkan heptil galat dan oktil galat memiliki IC50 terendah, yaitu 4,00 g/ml dan 7,47 g/ml berturut-turut. Penambahan rantai cabang menunjukkan peningkatkan inhibisi sel HeLa. Akan tetapi, derivat metoksi galat tidak menunjukkan perbaikan aktivitas sitotoksik terhadap HeLa. Dengan demikian, modifikasi struktur alkil galat berupa penambahan rantai utama dan cabang derivat asam galat memiliki aktivitas sitotoksik yang lebih baik terhadap HeLa.

.....

Cervical cancer is the third most common cancer in women and the fifth most common cancer in the world. Nowadays, the treatments for cervical cancer still have high rate of complications and side effects and low effectiveness in advanced stage led to the need for the development of other therapies. Gallic acid is known as potential anticancer. Structure modifications of alkyl gallic acid is predicted to change the pharmacokinetics and pharmacodynamics of the substance. The aim of this study was to observed cytotoxicity activity of gallic acid derivatives. We assessed inhibition concentration (IC50) of gallic acid derivatives in HeLa cells. The cells were given gallic acid or its derivatives with a minimal amount of 1x104 cells/ well at concentration ranged from 0.4 ? 51.2 g/ml for 48 hours. Afterwards, the cells were subjected for viability assessment using MTS (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium) assay. The results showed that IC50 of heptyl and octyl gallate were the lowest, which is 4.00 g/ml and 7.47 g/ml, respectively. Addition of chain branch was shown to improve the inhibition of HeLa. However, methoxy gallate derivatives did not improve the cytotoxic activity of the substance to HeLa. In conclusion, structure modification of alkyl gallate by adding the main chain and branch gallic acid derivatives increase the cytotoxic activity against HeLa