Potensi CD44 sebagai Biomarker untuk Diagnosis Kanker Kolorektal melalui Deteksi Ekspresi Gen pada Circulating Tumor Cells (CTC) dan Peripheral Blood Mononuclear Cells (PBMC) = Potential of CD44 as a Biomarker for Diagnosis of Colorectal Cancer Through Detection of Gene Expression in Circulating Tumor Cells (CTC) and Peripheral Blood Mononuclear Cells (PBMC)

Fitri Aulia, author

Abstrak

Kanker kolorektal menempati peringkat ketiga berdasarkan angka kematian di Indonesia. Cluster of differentiation 44 (CD44) merupakan biomarker yang dapat digunakan dalam mendeteksi kanker kolorektal. Ekspresi gen CD44 dapat dideteksi pada circulating tumor cell (CTC) yang diisolasi dari darah perifer, akan tetapi CTC merupakan rare cell. Ekspresi gen CD44 pada peripheral blood mononuclear cells (PBMC) berpotensi untuk dijadikan biomarker dalam deteksi kanker kolorektal karena kelimpahannya yang banyak jika dibandingkan dengan CTC, akan tetapi penelitian tentang deteksi ekspresi gen CD44 pada PBMC masih terbatas. Tujuan penelitian ini adalah untuk mendeteksi ekspresi gen CD44 pada sampel CTC dan PBMC sebagai potensi biomarker kanker kolorektal menggunakan metode semi-kuantitatif RT-PCR dan direct immunofluorescence. Hasil penelitian menunjukkan tidak terdeteksinya gen CD44 baik pada sampel CTC maupun PBMC dengan menggunakan metode semi-kuantitatif RT-PCR. Gen CD44 terdeteksi pada beberapa sampel PBMC dengan menggunakan direct immunofluorescence. Gen CD44 berpotensi sebagai biomarker kanker kolorektal, namun penelitian ini perlu diteliti lebih lanjut.

.....Colorectal cancer ranks third based on mortality in Indonesia. Cluster of differentiation 44 (CD44) is a biomarker that can be used to detect colorectal cancer. CD44 gene expression can be detected in circulating tumor cells (CTC) isolated from peripheral blood, but CTC is a rare cell. The expression of the CD44 gene in Peripheral Blood Mononuclear Cells (PBMC) has the potential to be used as a biomarker in the detection of colorectal cancer because of its high abundance when compared to CTC, but research on the detection of CD44 gene expression in PBMCs is still limited. The purpose of this study was to detect the expression of the CD44 gene in CTC and PBMC samples as a potential colorectal cancer biomarker using semi-quantitative RT-PCR and direct immunofluorescence methods. The results showed that the CD44 gene was not detected in both CTC and PBMC samples using the semi-quantitative RT-PCR method. The CD44 gene was detected in several PBMC samples using direct immunofluorescence. The CD44 gene has potential as a biomarker of colorectal cancer, but this research needs to be investigated further.