

Ekspresi gen SOX2 pada sel kanker payudara CD44+/ CD24- dan CD44-/CD24- yang di ko-kultur dengan MEF (mouse embryonic fibroblast) = Gene expression of SOX2 in breast cancer cell CD44+/CD24- and CD44-/CD24- in co-culture with MEF (mouse embryonic fibroblast)

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Abstrak

Gen SOX2 telah dilaporkan memegang peranan penting dalam menginduksi sel punca progenitor dari sel fibroblast manusia dewasa. Peningkatan ekspresi gen SOX2 berkorelasi dengan peningkatan tingkat keparahan kanker payudara. Namun, bagaimana SOX2 memiliki sifat onkogenik belum diketahui secara pasti. Penelitian ini bertujuan untuk mendapatkan informasi mengenai ekspresi gen SOX2 pada sel kanker payudara CD44+/CD24- dan CD44-/CD24- yang di ko-kultur dengan Mouse Embryonic Fibroblast (MEF) berdasarkan waktu pengkulturan sel sebagai upaya untuk mempelajari ekspresi gen dan sifat dari sel punca kanker payudara pada sel kanker payudara dari pasien kanker payudara wanita Indonesia.

Tingginya ekspresi gen SOX2 diasumsikan dapat menjadi indikasi untuk menentukan kondisi optimum pada kultur sel kanker payudara. Level RNA gen SOX2 diukur dengan menggunakan reverse transcription-polymerase chain reaction (RT-PCR) dan dinormalisasi dengan menggunakan housekeeping gene PUM1 sebagai kontrol dalam. Hasil menunjukkan bahwa ekspresi gen SOX2 tertinggi di hari ketiga pada kultur sel punca kanker (CD44+/CD24-), demikian pula dengan kultur sel non punca (CD44-/CD24-), dan di hari pertama pada kultur sel kanker payudara (CD44/CD24).

.....SOX2 gene has been reported to play an important role in inducing stem cell progenitor cells from adult human fibroblasts. Increase in SOX2 gene expression known to correlate with the increase of breast cancer severity. However, the oncogenic properties of SOX2 has not been confirmed yet. This research aimed to obtain information about the level of SOX2 gene expression of breast cancer cells CD44+/CD24- dan CD44-/CD24- in co-culture with Mouse Embryonic Fibroblast (MEF) based on time of cell culture, in an attempt to study the gene expression and the nature of cancer stem cells in breast cancer cell in Indonesian female breast cancer patient.

High SOX2 gene expression was assumed as the indication of the optimum culture condition of breast cancer cell. SOX2 gene RNA level was measured performing reverse transcription-polymerase chain reaction (RT-PCR) and normalized using the housekeeping gene PUM1 as an internal control. Results showed that the highest SOX2 gene expression was found in day 3 for cancer stem cell cultures (CD44+/CD24-) as well as for non cancer stem cell cultures (CD44-/CD24-), and in day 1 for breast cancer cell cultures (CD44/CD24).