

Signal peptide dan ketergantungan androgen serpina1f di epididimis mencit = Signal peptide and androgen dependency of serpina1f in the mouse epididymis

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Abstrak

Epididimis adalah bagian sistem reproduksi laki-laki yang berperan penting dalam proses pematangan sperma. Proses ini berlangsung karena adanya interaksi antara protein yang disekresikan oleh sel-sel epitel epididymis dengan sperma. Banyak gen yang mengatur protein-protein tersebut belum dipahami sepenuhnya, contohnya Serpina1f. Penelitian ini bertujuan untuk mengidentifikasi signal peptide sebagai dasar informasi untuk mempelajari fungsi gen tersebut lebih lanjut, dan ketergantungan androgen untuk secara dini menyeleksi apakah gen ini cocok dikembangkan menjadi kontrasepsi pria nonhormonal. Metode penelitian untuk memprediksi signal peptide adalah dengan menggunakan SignalP 4.0, sedangkan analisis ketergantungan androgen menggunakan real-time RT-PCR. Hasil penelitian ini memperlihatkan bahwa Serpina1f mengandung signal peptide pada 27 asam amino yang pertama, sedangkan ekspresi gen berubah sesuai level androgen. Hal ini menunjukkan bahwa Serpina1f menghasilkan secretory protein dan gen ini diregulasi androgen.

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Epididymis is a part of male reproductive system that plays important role in sperm maturation process. This process occurs by the interaction between proteins secreted by epididymal epithelial cells with sperm. Many of the genes that regulate the protein involved in this process have not been understood completely, such as Serpina1f. The objective of this research is to identify its signal peptide as basic information to further learn its function, and androgen dependency to early select whether this gene could be a target for a nonhormonal male contraception. SignalIP 4.0 was used to predict the presence of signal peptide in its amino acid sequence, while the androgen dependency analysis was performed by quantitative real-time RT-PCR using RNA samples from gonadectomized mice and gonadectomized mice plus androgen therapy. The result showed that Serpina1f contained signal peptide at the first 27 amino acid sequence, while its expression fluctuated according to androgen level. It can be concluded that Serpina1f encodes a secretory protein and it is an androgen dependent gene.