





 **Current Issue**


 **Browse Issues**

 **Search**




 **About this Journal**

 **Instruction to Authors**

 **Online Submission**

 **Subscription**

 **Contact Us**



 **RSS Feed**

Acta Medica Iranica

2009;47(4) : 169-174

The Detection of Dopamine Gene Receptors (DRD1-DRD5) Expression on Human Peripheral Blood Lymphocytes by Real Time PCR

"Mohammad Reza Ostadali, Ghasem Ahangari, Mohammad Bagher Eslami, Alireza Razavi, Mohammad Reza Zarrindast, Hamid Reza Ahmadkhaniha, Jafar Boulhari "

Abstract:

There is interrelationship between the immune and nervous systems that is accomplished by the molecular mediators. Dopamine is one of the most important neurotransmitters. Five different dopamine receptor genes (DRD1, DRD2, DRD3, DRD4, and DRD5) have been recognized and cloned. The expression of the dopamine receptors is well characterized in the brain but little work has been done to examine their expression in other organ tissues. In certain diseases of the immune and nervous systems, alterations in dopamine receptors gene expression in different cells have been reported. This suggests that dopamine and its receptors have important role in pathophysiology of above-mentioned diseases. In the present study, using Real Time Polymerase Chain Reaction (PCR) technique, we investigated dopamine receptors genes expression in PBMC of normal individuals. The PBMC was separated from normal whole blood by Ficoll-hypaque; the total cellular RNA was then extracted and the cDNA was synthesized. This process followed by real time-PCR using primer pairs specific for five dopamine receptors mRNAs and β -actin as internal control. The results showed the presence of all types of dopamine receptors in lymphocytes of normal individuals. The specificities of the obtained PCR products for the respective dopamine receptors fragments were confirmed by sequenced analysis capillary system. In conclusion, the present study has shown that human lymphocytes express five dopamine receptors DR1-DR5. However, the conclusive evidence on the possible function of these receptors in lymphocytes remains unknown. Because lymphocytes express all of the five neuronal dopamine receptors, it is quite reasonable to consider them as a model of dopaminergic neuron.

Keywords:

[Dopamine Receptors](#) . [Lymphocytes](#)

TUMS ID: 2794

Full Text HTML  Full Text PDF  170 kB

top ▲

[Home](#) - [About](#) - [Contact Us](#)

TUMS E. Journals 2004-2009
Central Library & Documents Center
Tehran University of Medical Sciences

Best view with Internet Explorer 6 or Later at 1024*768 Resolutions