

# Autophagy

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## **Abstract:** Background

Behçet's disease (BD) defined as a systemic complex disorder characterized by recurrent attacks of acute inflammation. Recent studies presented a pivotal role for the autophagy pathway and proteins in immunity and inflammation. This study was performed to determine Autophagy Genes expression in Macrophages Derived from patients With Behcet's Disease

## Methodology:

We enrolled 10 smoking patient, 10 nonsmoking patient and 10 health persons for control group that are matched in gender and age with patient group. All patients were obtained 35 ml peripheral blood. Monocytes were differentiated to macrophages by M-CSF. Total RNA was extracted from all macrophages well. Complementary DNA (cDNA) was synthesized. Measurement of cytokine mRNA (IL-1 $\beta$ , IL-6, and TNF $\alpha$ ) and Autophagy Genes (Atg5, Atg7, Atg12, Lc3b, mTOR, Raptor and Rictor) expression was performed by quantitative Real-time PCR. Statistics analysis was done by SPSS, version 22 and Graph pad Prism were used for plots.

## Results:

Patient mean age is 37 years (mean=37; SD=9.6) and There is significant different between all groups in 0.05 level significantly. It is much higher gene expression in smoker in Atg5, Atg7, Atg12 Lc3b, mTOR, Rictor and Raptor (P-Value= 0.001- 0.006). Also there is significant different between nonsmoker and control group in Atg5, Atg7, Atg12 Lc3b, mTOR, Rictor and Raptor (P= 0.01 – 0.000). There is positive and negative association between Autophagy Genes expression

With IL-1 $\beta$ , IL-6 and TNF $\alpha$

## Conclusion

Autophagy genes expression increased in Behcet's Disease in order to control and regulate the immune system. Maybe there is a kind of component in cigarette that have a synergic effect on autophagy amplification of genes expression. There is negative association between autophagy genes expression with pro inflammatory cytokines like TNF $\alpha$  and IL-6 in patients with Behcet's Disease. It seems to be a kind of method to inflammation ameliorate

**Key words:** Behcet's Disease, autophagy genes expression