

# Characterization of Interleukin-17 in Botryllus schlosseri: A Driver of the Innate Immune Response

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## INTRODUCTION

- Interleukins are a family of cytokines (signaling proteins) that play a role in the immune response.
- Botryllus schlosseri possess only one Interleukin: Interleukin-17 (IL-17).
- How has IL-17 evolved and how is it regulated in Botryllus schlosseri?

## METHODS

- Genomic and Transcriptomic data was utilized to identify different members of the IL-17 family:
  - Phylogenetic tree (using Maximum likelihood)
  - Genomic Position and Direction
- Regulation of IL-17 was studied through:
  - Differential expression of candidate ligand and receptor genes during Botryllus’s normal life cycle using transcriptome data
  - RT-qPCR was used to identify if IL-17 ligands or receptors had different expression levels during infection (with BioParticles™)

## RESULTS

- IL-17 ligand expression is greater in stages A-C compared to stage D
- IL-17 receptor expression was constant throughout the balstogentic cycle
- Select IL-17 members were upregulated when infected with BioParticles™

## DISCUSSION

- The genomic scaffolds indicates that several IL-17 members are a result of gene duplication which is a precursor for the evolution of interleukins
- The upregulation of IL-17 during an infection suggests that the gene in Botryllus is integral for its innate immune response.

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The upregulation of Interleukin-17-L7 during an infection suggests that the gene in B. schlosseri is integral for its innate immune response.

