# Evidence of Conformity between the Ophiocomina Nigra HLA-E Transcriptome and the O.Nigra HLA-E Gene in Invertebrates

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## Abstract

This work allows us to corroborate the existence of MHC genes in Invertebrates, and particularly HLA-E one, in its own right. Identities at 100% were discovered between HLA-E synthesized gene and original HLA-E Transcriptome

## Introduction

MHC genes of Class I and Class II were discovered in 2018 in Echinodermata (Invertebrates) [1-3]. Since we have performed many works in bioinformatics, especially on HLA-E gene which belongs to class I in Human We verify in the present work the authenticity of the O.Nigra HLA-E gene.

## Methods

HLA-E from Ophiocomina Nigra Transcriptome was synthesized « de novo »into a pUC-GW-Kan plasmid and amplified in our laboratory. Blasts were performed in a second step [3].

Comparisons with the original O.Nigra HLA-E Transcriptome was then done

## Results

Query: None Query ID: lcl|Query_40765 Length: 281>

Sequence ID: Query_40767 Length: 934

Range 1: 103 to 383

Score: 520 bits (281), Expect: 7e-152,

Identities: 281/281(100%), Gaps: 0/281(0%), Strand: Plus/Plus

Query 1 TGTAATCCCAGCACTTTGGGAGGCCGAGGCGGGCGGATCACGAGGTCAGGAGATCGAGAC 60

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Sbjct 103 TGTAATCCCAGCACTTTGGGAGGCCGAGGCGGGCGGATCACGAGGTCAGGAGATCGAGAC 162

Query 61 CATCCTGGCTAACACAGTGAAACCCCGTCTCTACTAAAAATACAAAAAATTAGCCGGGCG 120

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct 163 CATCCTGGCTAACACAGTGAAACCCCGTCTCTACTAAAAATACAAAAAATTAGCCGGGCG 222

Query 121 TGGTGGCGGGCGCCTGTAGTCCCAGCTACTCGGGAGGCTGAGGCAGGAGAATGGCGTGAA 180

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct 223 TGGTGGCGGGCGCCTGTAGTCCCAGCTACTCGGGAGGCTGAGGCAGGAGAATGGCGTGAA 282

Query 181 CCCGGGAGGCGGAGCTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAGCCTGGGCGAC 240

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct 283 CCCGGGAGGCGGAGCTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAGCCTGGGCGAC 342

Query 241 AGAGCGAGACTCTGTCTCaaaaaaaaaaaaaaaaaaaaaa 281

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Sbjct 343 AGAGCGAGACTCTGTCTCAAAAAAAAAAAAAAAAAAAAAA 383

## Conclusion

Similarities, identities at 100 % occur in the sequences given in results. That confirms the existence of HLA-E gene in Ophiocomina Nigra genome, so in Echinodermata which are the only Phylum in Invertebrates to present such data.

## References

1. Leclerc M. Proteomics Bioinformatics. 2022;2(1):59-61
2. Leclerc M. MHC genes in Echinodermata Lambert editions. 2019.
3. Leclerc M. J. Clin Class. Immunol. 2022;1:1-4.