Bipolar Jellyfish: Fact or Fiction?

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BIO299_3

1 No, I'm not referring to the mental illness, but rather to the phenomenon where **the same species is found at both the Arctic and Antarctic poles.** Most branches of the Tree of Life have bipolar species, meaning they inhabit both polar regions. However, we **still need to fully understand** the evolutionary origins and implications of this bipolar distribution.

To **fill the gaps in our knowledge**, I have sequenced DNA from 10 specimens, specifically targeting various species within the **Hydrozoa** group.

2 Methods

1: Sampling

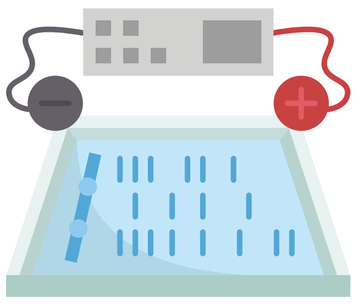
2: Sorting

3: DNA lab

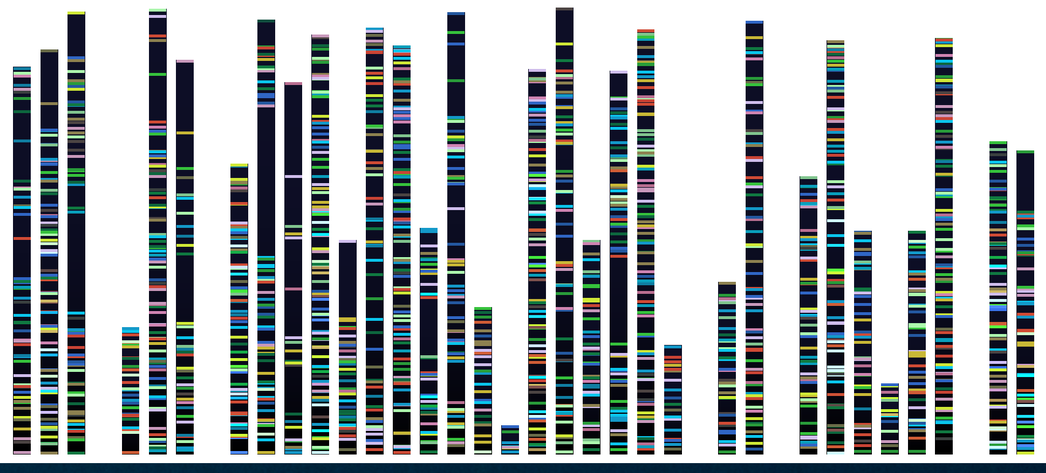
1) DNA extraction

2) PCR

3) Gel electro-phoresis



4) DNA sequencing



3 Results

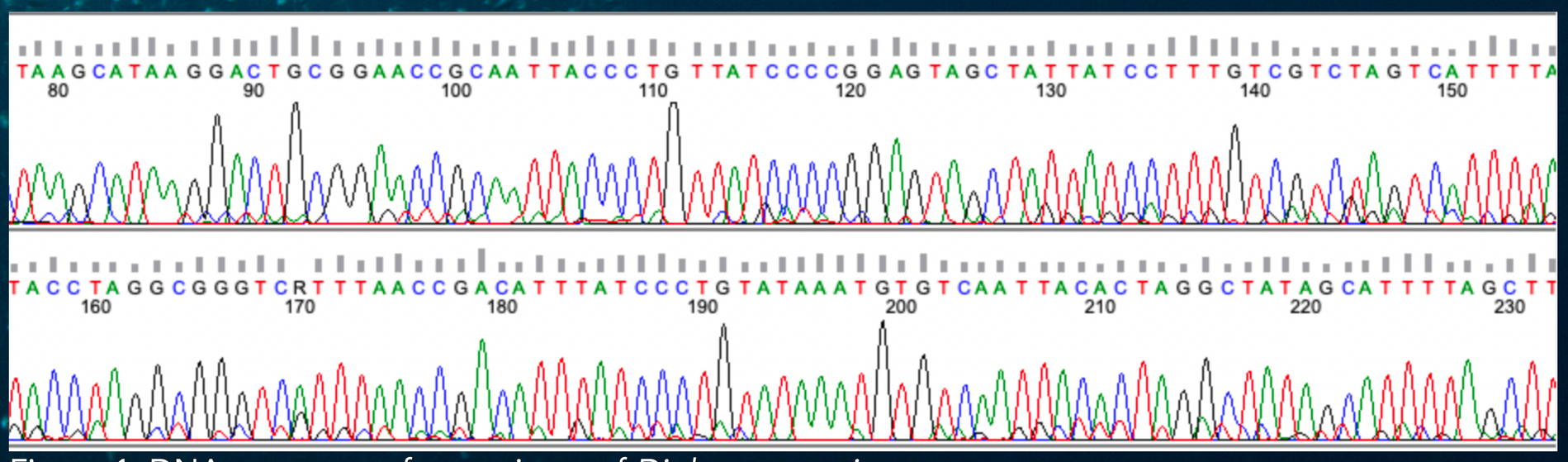


Figure 1: DNA sequence of a specimen of *Diphyes antartica*

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Picture credit: Joan J. Soto-Angel

Diphyes antartica

4 The DNA sequence exhibits an **83.3% match** with that of *Sulculeolaria quadrivalvis*. *S. quadrivalvis* and *D. antartica* both belong to the class of **Hydrozoa** and due to the absence of published data on *D. antartica*, these findings can be considered **promising**.

References:
The evolutionary origins and consequences of bipolarity in Hydrozoa. | POLE2POLE Project | Fact Sheet | H2020 (2022) CORDIS | European Commission. Available at: https://cordis.europa.eu/project/id/101031845 (Accessed: 25 September 2023).

Take home message:

5 DNA analysis shows a **genetic link** between Hydrozoan species at the poles, supporting the **reality of bipolar distribution**.

The Pole2Pole project will continue to explore the origins, diversification, and speciation processes of polar biota in greater depth.