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# What do we know about ice-nucleating macromolecules from birch pollen?

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# What we know so far

- Various pollen are known ice-nuclei [1,2]
- High quantities of pollen in atmosphere

https://www.independent.co.uk/climate-change/news/north-carolina-pollen-cloud-sky-air-quality-climate-change-a8863291.html

https://www.youtube.com/watch?v=Mhx71QxuooA

# What we know so far

Birch pollen (from *Betula pendula*)

Activity below -15°C [2,3]

macromolecules → INMs [2]

- Found all over trees' tissues [4,5]
- Composition remains largely unknown

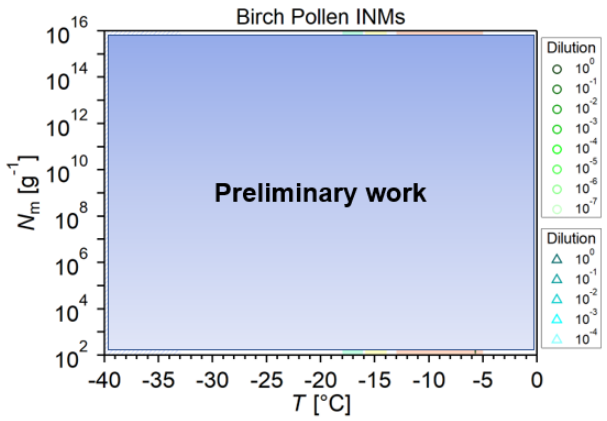
INMs > 100 kDa [2,3]

# What looked at

Activity below -15°C

INMs > 100 kDa

## At what temperature are the INMs active?

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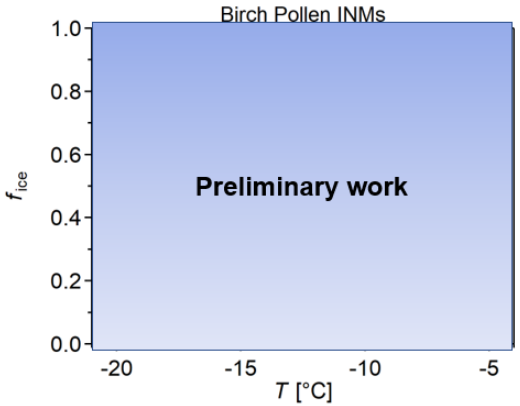
## In what size range are the INMs?

- **Previously:**
  **INMs > 100 kDa** [2,3]

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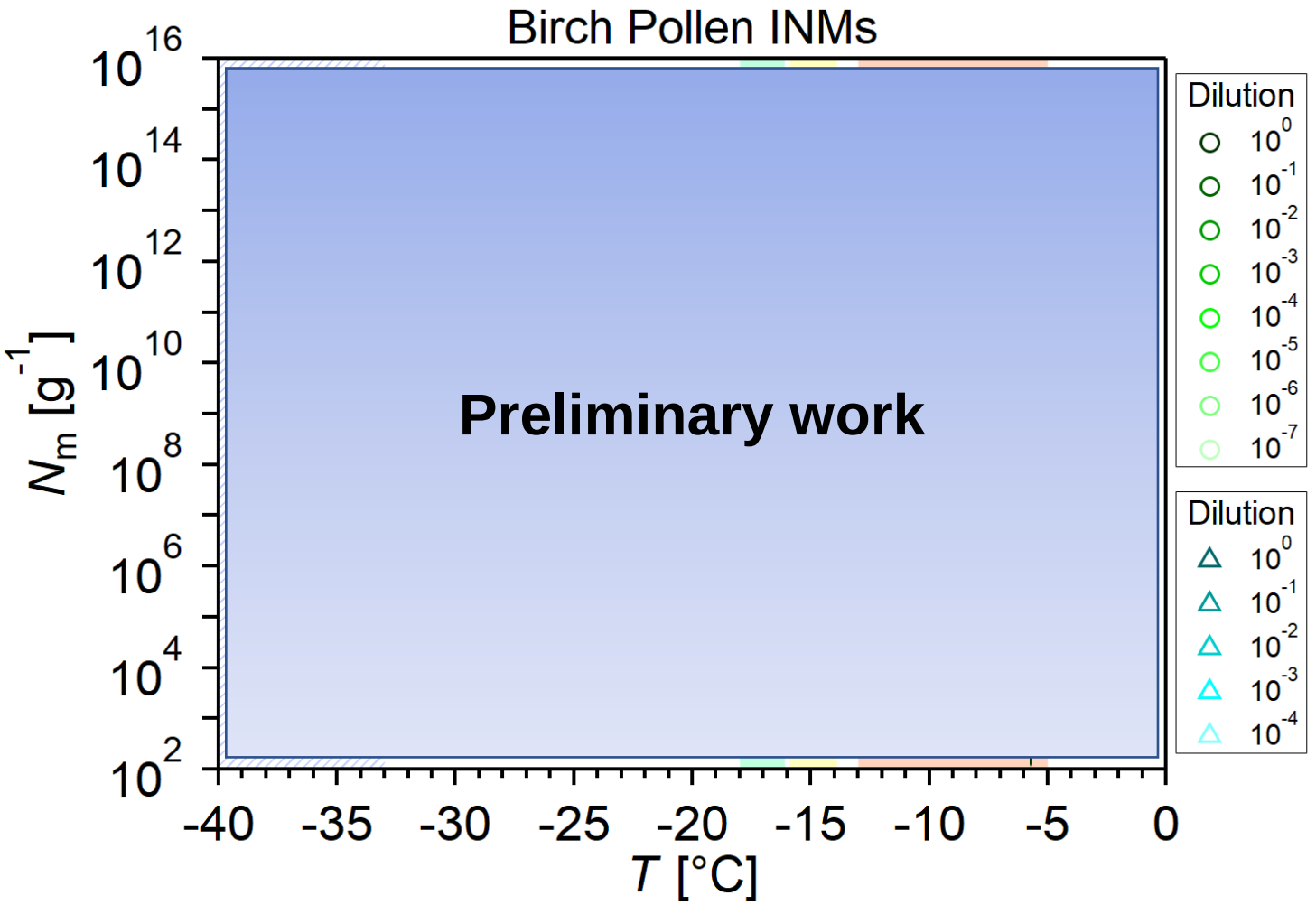

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- **Previously:**
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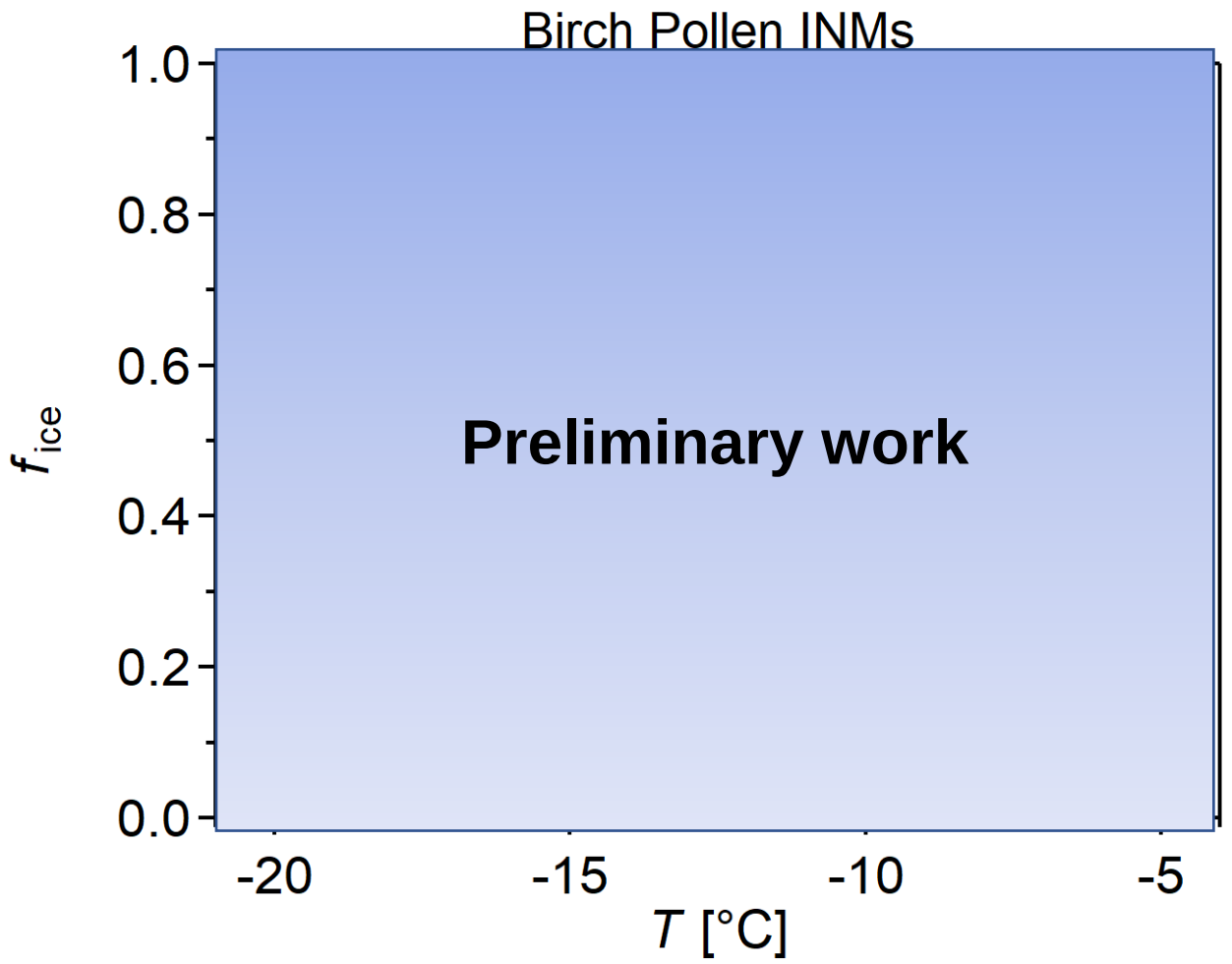
→ INM size range might be different than assumed

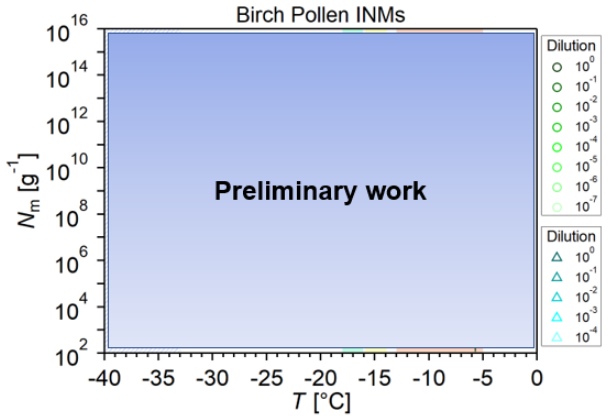


# What we found

**Preliminary work**

**Preliminary work**

## At what temperature are the INMs active?

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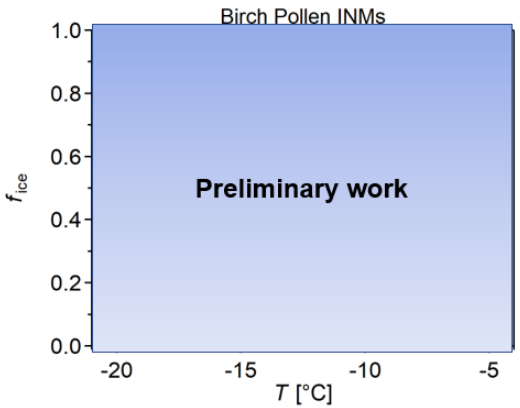


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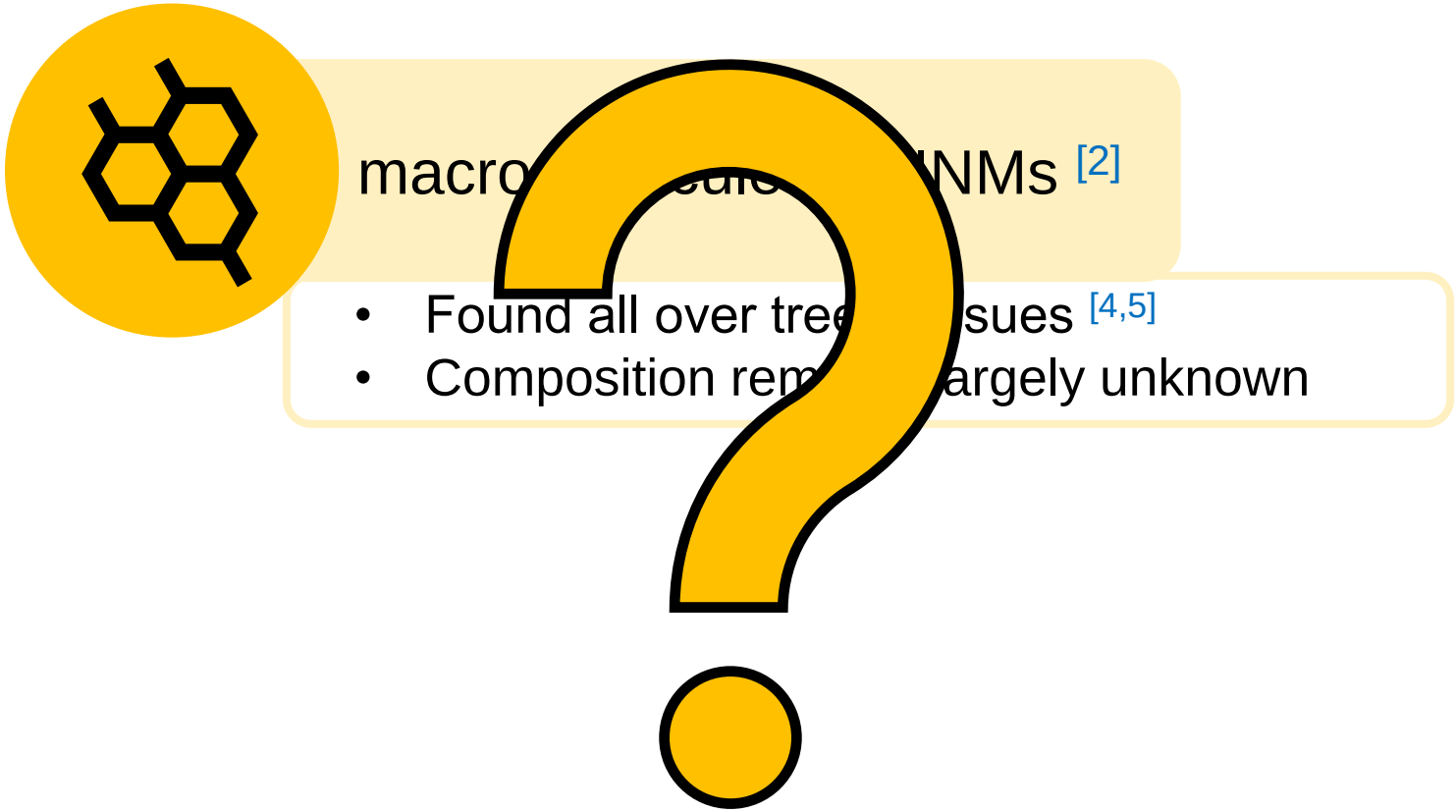
# What’s next?


macro
NMs [2]
• Found all over tree sues [4,5]
• Composition rem argely unknown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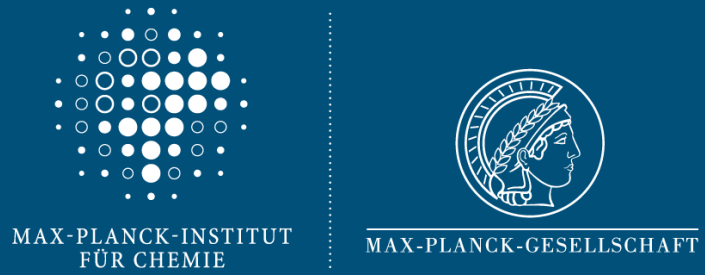


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# Thank you for your attention!

Please feel free to contact me about my work:
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# References


(1) Diehl, K., C. Quick, S. Matthias-Maser, S. K. Mitra, and R. Jaenicke. "The Ice Nucleating Ability of Pollen: Part I: Laboratory Studies in Deposition and Condensation Freezing Modes." *Atmospheric Research* 58, no. 2 (2001/07/01/ 2001): 75-87. https://doi.org/https://doi.org/10.1016/S0169-8095(01)00091-6.

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