

# Deciphering the role of mycobacterial secreted proteins through structural biology

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# PROPOSITIONS

for the defence of the thesis

## Deciphering the role of mycobacterial secreted proteins through structural biology

Abril Gijsbers Alejandre

25 January 2022

1. The lack of an accessible standard protein for the cryo-EM community is not stopping the development and maintenance of equipment, but it will accelerate it (chapter 3).
2. The discovery of ESX-1 outer-membrane machinery is crucial for understanding the secretion system and its usage as a structure-based drug and vaccine design. EspB could be one of its elements, thus the key to opening such a door (chapter 4).
3. The unstructured nature of EspK's middle region seems essential for the correct functioning of the protein, more important than its length or sequence (chapter 5).
4. Analogous molecules that mimic EspK's effect on the dissociation of EspB oligomer could serve as TB treatment (chapter 6).
5. If you want to understand the function of a protein, consider studying it from different fields of expertise.
6. The value of a result should not be measured based on its resolution, rather on how insightful the information is.
7. For *in vitro* studies, protein purification is often the most challenging obstacle to overcome. Techniques that circumvent this step (*in situ* studies) will be the future of science.
8. In science, the research question is the key to every discovery. Without one, you might end up nowhere.
9. Efficient treatment against tuberculosis will have an evident improvement in the quality of life of millions and the development of low and middle-income countries.