doc. Mgr. Tomáš Doležal, Ph.D. August 29th 2019

State exam guide – Department of Molecular Biology and Genetics

During the Ph.D. state exam, the committee will test student's broader understanding of biology related to the project, including the methodological approaches, and of course an appropriate understanding of general molecular and cell biology and genetics. For example, if the student studies metabolism of mitochondria, he/she should know something about its biology, as its evolutionary origin, general cellular roles, biochemistry (metabolism), genetics (special inheritance related to mitochondria). Student should know general methodological approaches used for studying mitochondria and should perfectly understand all methods that are used particularly in the project. The student should also know quite well the biology of the model organism he/she is working with and again knowing it from little broader perspective – not just describing what is important for the project but have a good knowledge about its biology in broader sense. In addition, of course, the student should know the general molecular and cell biology and genetics, as for example he/she should be able to describe regulation of gene expression at various levels with sufficient detailed understanding, not just naming transcription and translation …

TIP: you can partly influence the discussion by your way of introducing your project – whatever you say about it in the beginning (we will allow you to introduce it in ~5 min intro) might influence the committee and what they want to ask you about it. You should also learn who the members of the committee are and what their background is. By doing this, you can somewhat expect what they might be more interested in. If someone studies evolutionary origin of mitochondria, you should pay attention to that if you study mitochondria, you can expect questions related to the origin or at least you can expect that such person will know for sure if you are saying something wrong. Sometimes, the background of the member is not related to your project but look up his/her papers to see what he/she likes, what are his/her "favorite" methodological approaches to find any possible relation to your project, so that you are prepared – it is somewhat similar what you might do in future preparing for interviews etc.