

# ABSTRACT

Charles University in Prague  
Fakulty of Pharmacy in Hradec Králové  
Department of Pharmacology and Toxicology

Performed at  
Institute of Pharmacology  
Department of Molecular Pharmacology  
Ruprecht-Karls-University  
Heidelberg

Candidate: Jana Prokipová  
Supervisor in home University: Doc. MUDr. Radomír Hrdina, CSc.  
Supervisor in external University: Prof. Dr. Markus Schwaninger  
Title of diploma thesis: The role of TAK1 in neuronal survival

Transforming growth factor- $\beta$  activated kinase-1 (TAK1) is a serine/threonine kinase and it is part of the mitogen-activated protein kinase (MAPK) signaling. TAK1 is a key modulator of the transcription factors NF- $\kappa$ B and AP1. Recent studies have shown that TAK1 is essential for the survival of different cell types. Here, we focus on the biological role of TAK1 in neurons *in vivo*. We used DAB immunohistochemistry to evaluate the effect of TAK1 in neuronal survival. Therefore we compared the number of neurons in TAK1 knockout mice and TAK1<sup>fl/fl</sup> control mice. However, we did not find any significant difference in the number of neurons between both groups of mice.