

ABHD6 as a potential target in central regulation of obesity

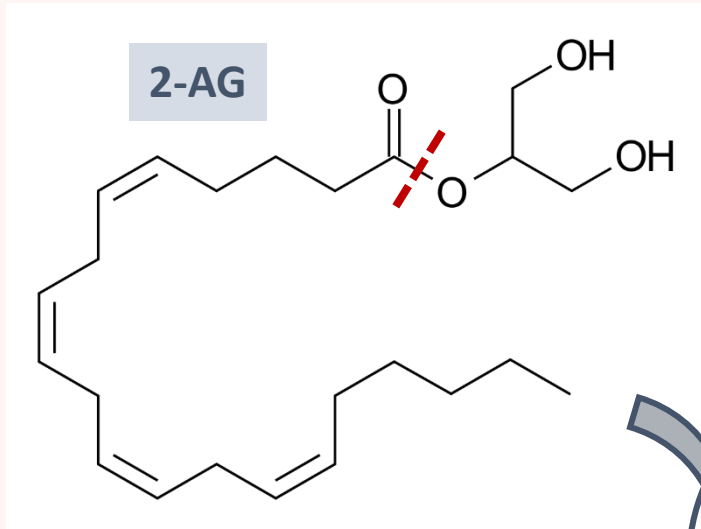
Ana Cristina Reguera
PhD Student

02-06-2021

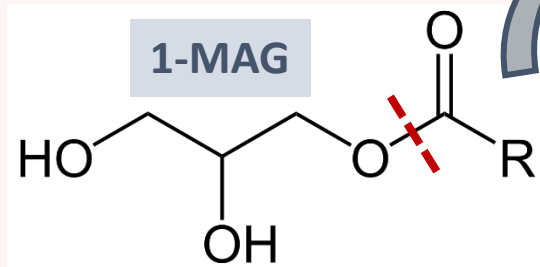
UIC
barcelona

ABHD6, a Monoacylglycerol Hydrolase

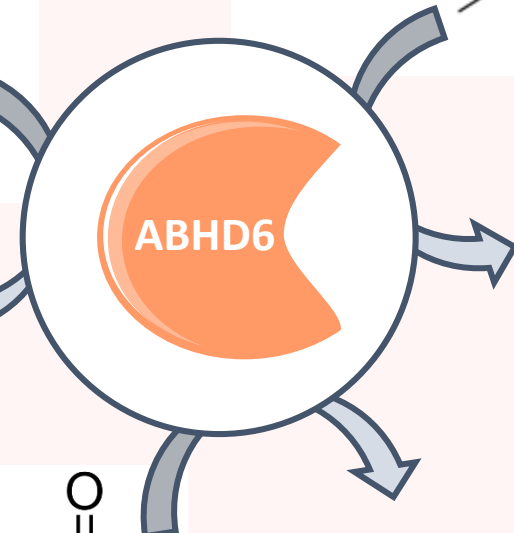
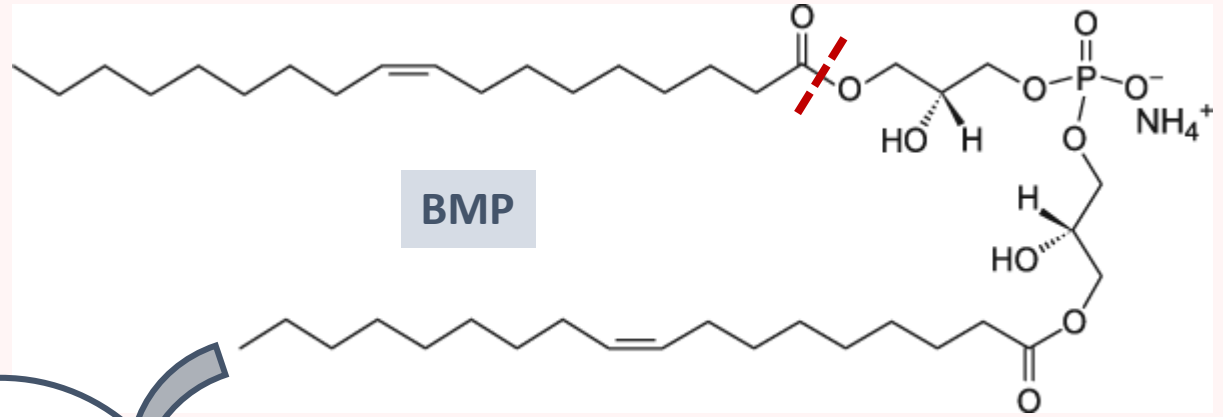
(Blankman et al. 2007)
(Marrs et al. 2010)



(Navia-Paldanius et al. 2012)

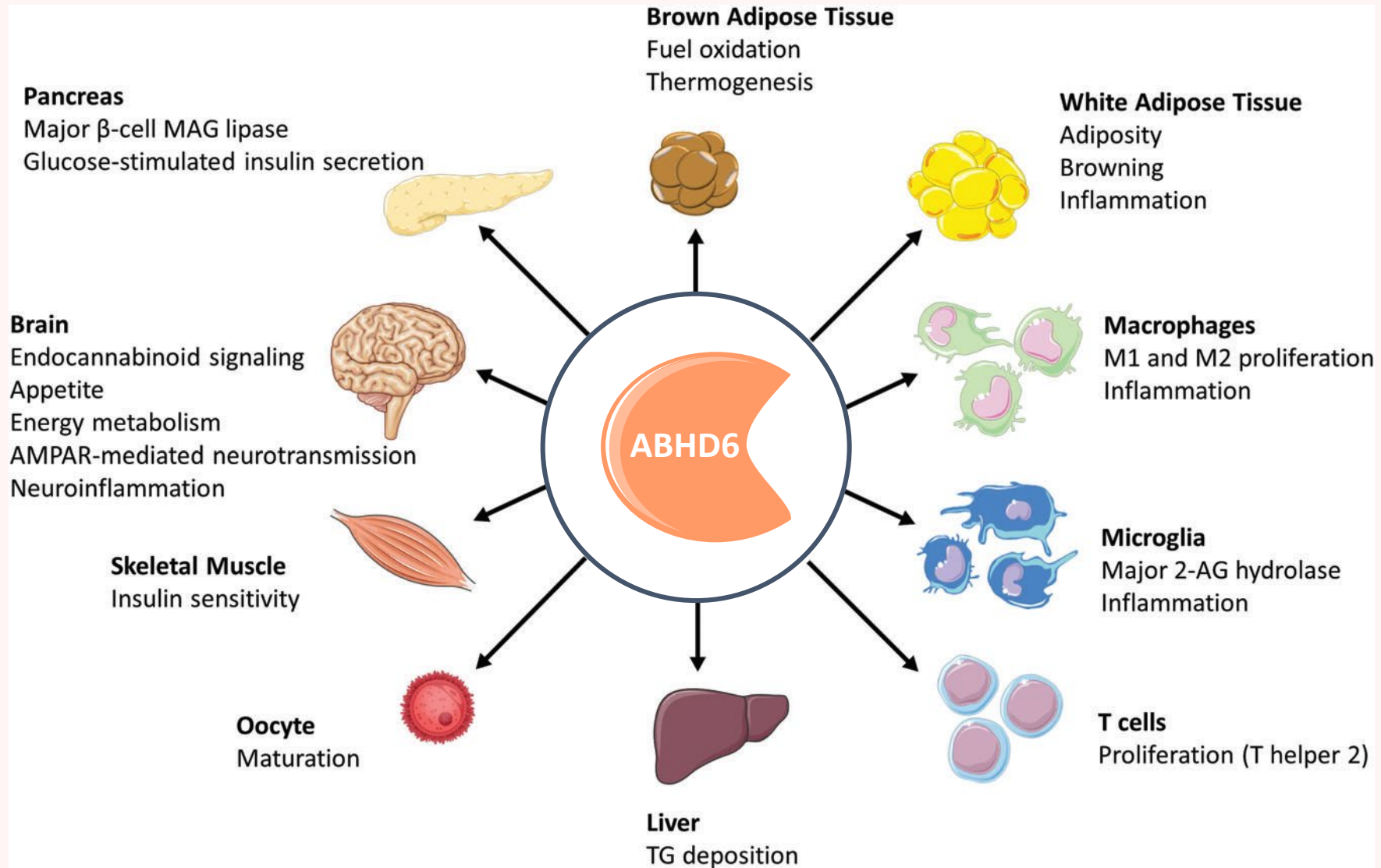


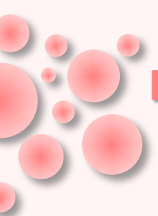
(Pribasnig et al. 2015)



2-AG: 2-Arachidonoylglycerol
1-MAG: 1-Monoacylglycerol
BMP: Bis(monoacylglycerol)phosphate

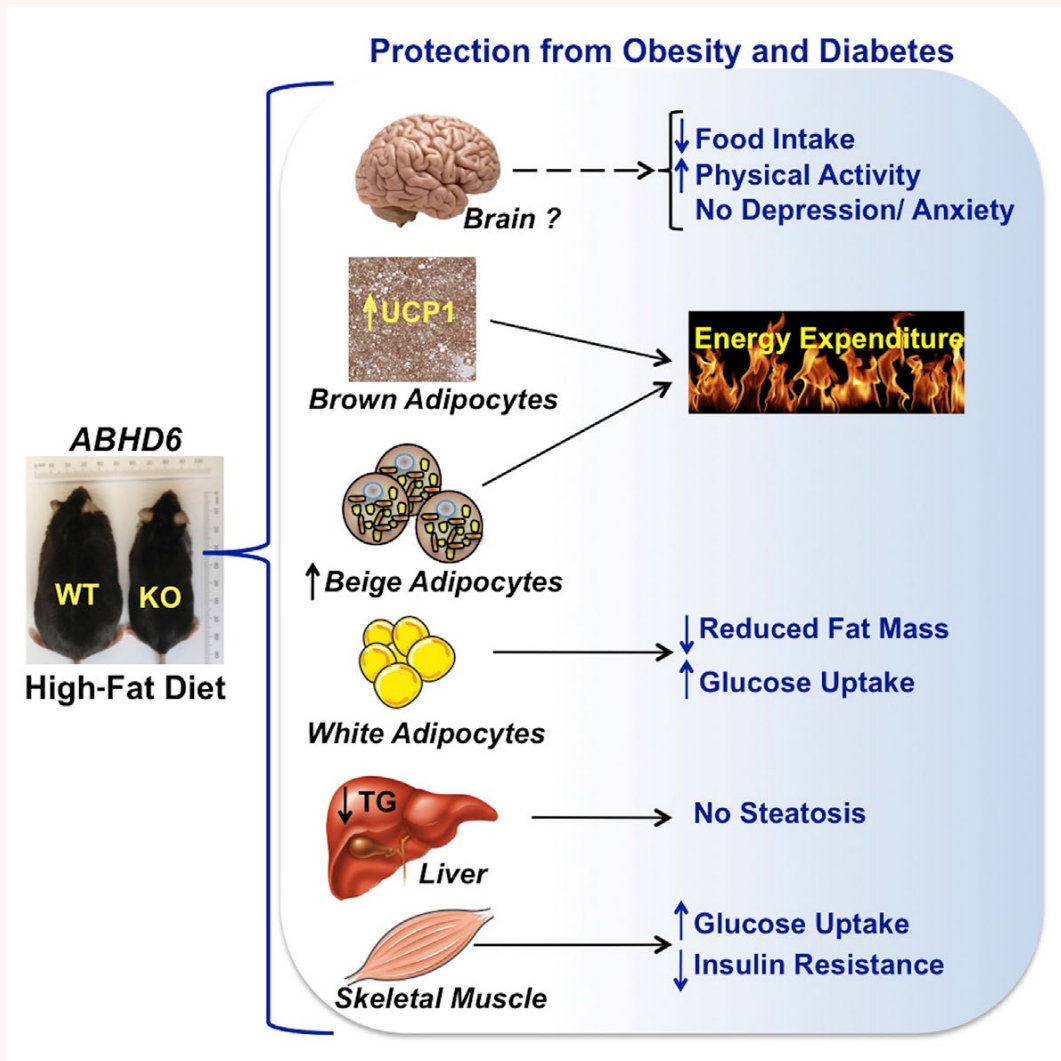
ABHD6, a Monoacylglycerol Hydrolase





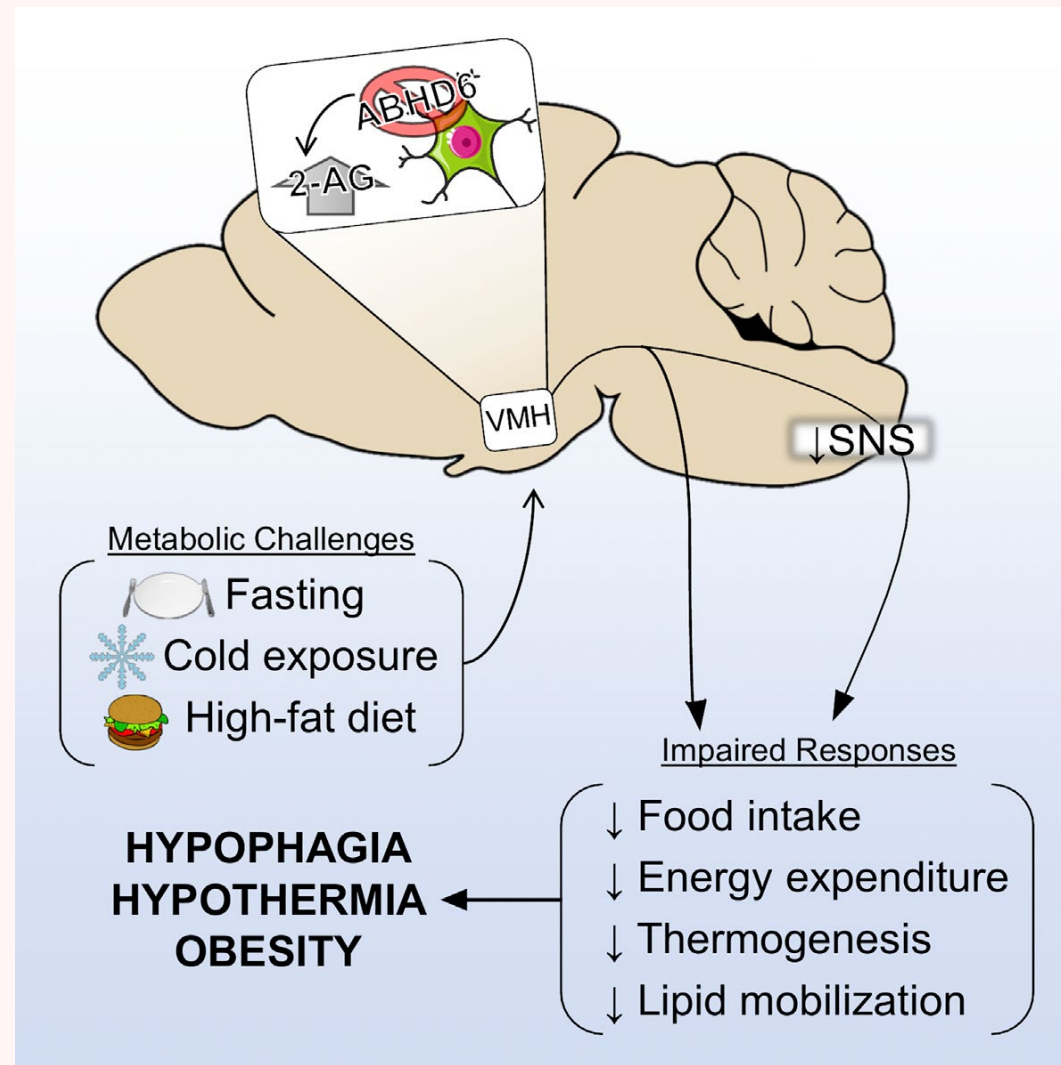
INTRODUCTION

Role of ABHD6 in Obesity



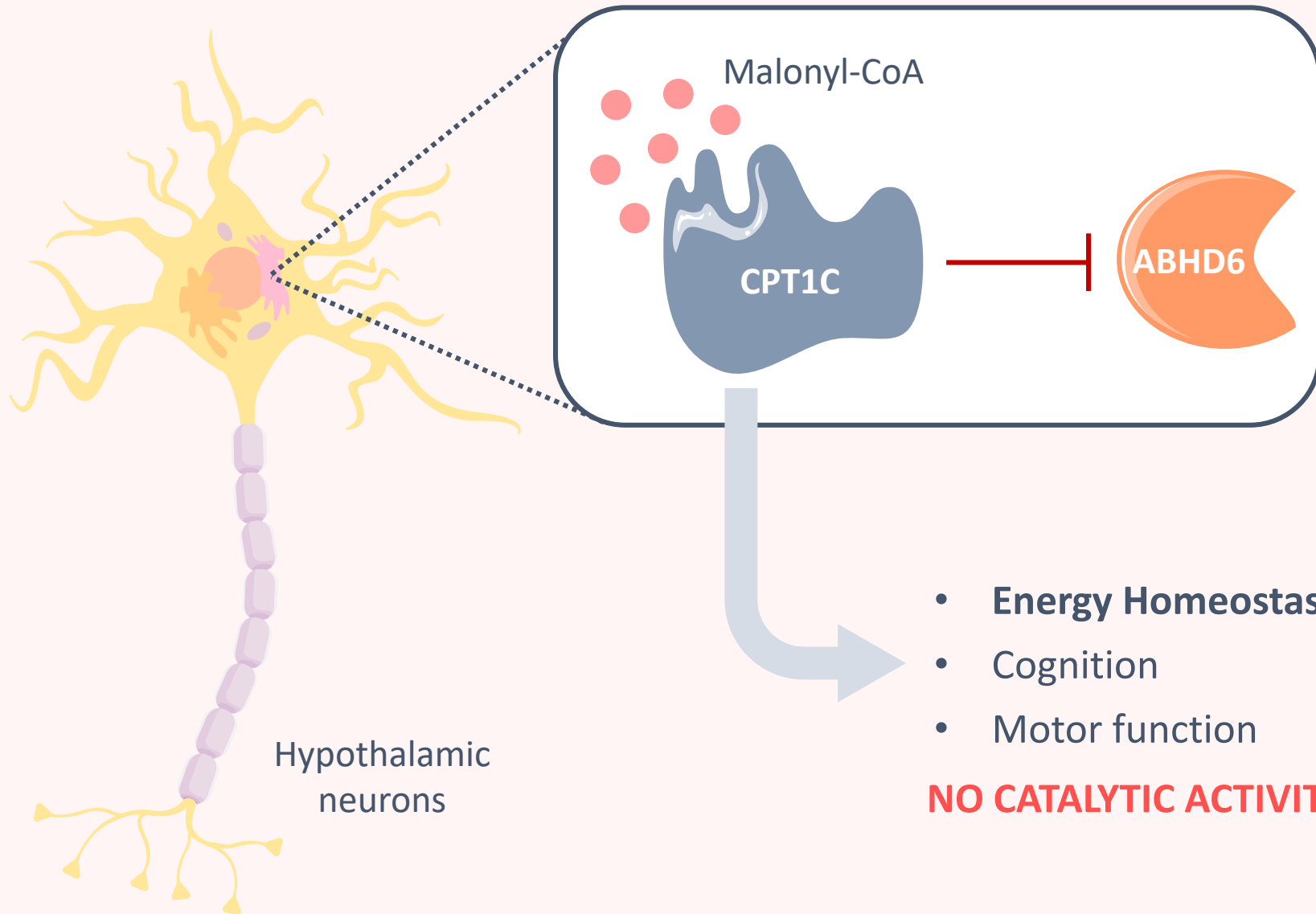
(Zhao et al. 2016)

CENTRAL ROLE



(Fisette et al. 2016)

Hypothalamic ABHD6-CPT1C Axis in Obesity



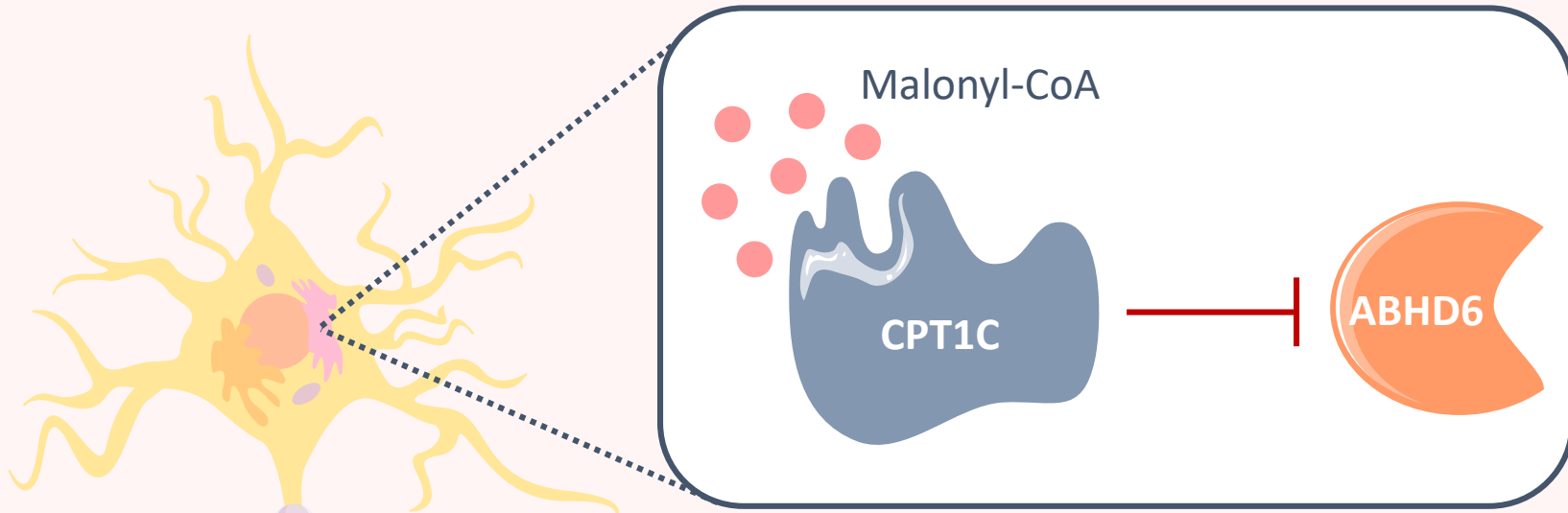
CPT1C, the first negative regulator of ABHD6 Activity!!

- Energy Homeostasis
- Cognition
- Motor function

NO CATALYTIC ACTIVITY!

INTRODUCTION

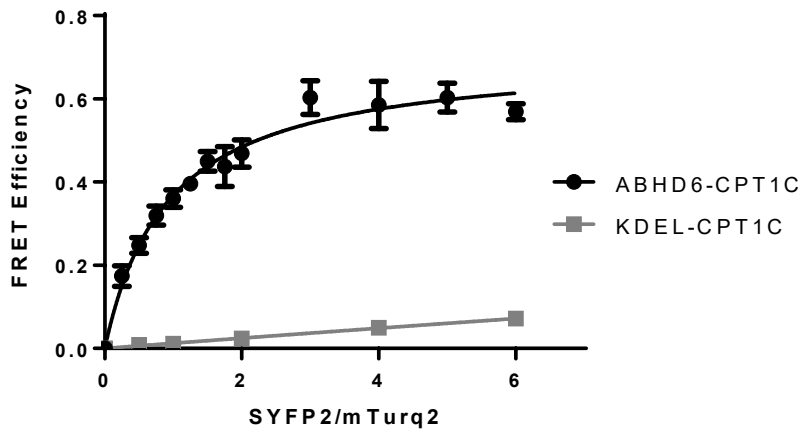
Hypothalamic ABHD6-CPT1C Axis in Obesity



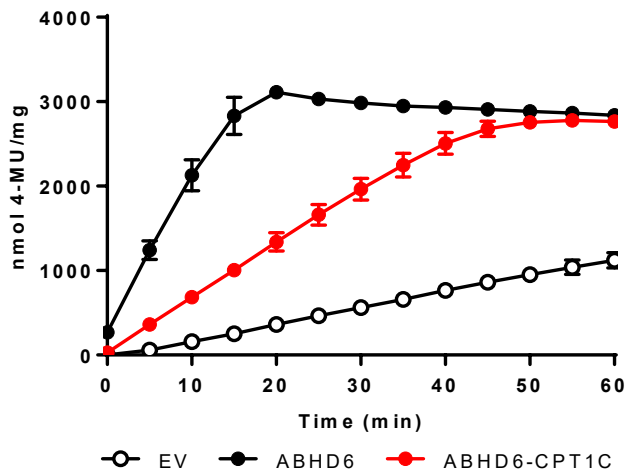
Potential therapeutic target against central regulation of obesity

(Miralpeix, Reguera et al., 2021)

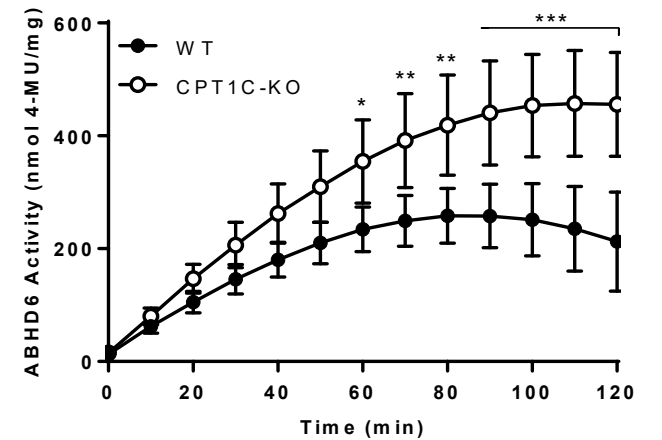
INTERACTION



HEK293T

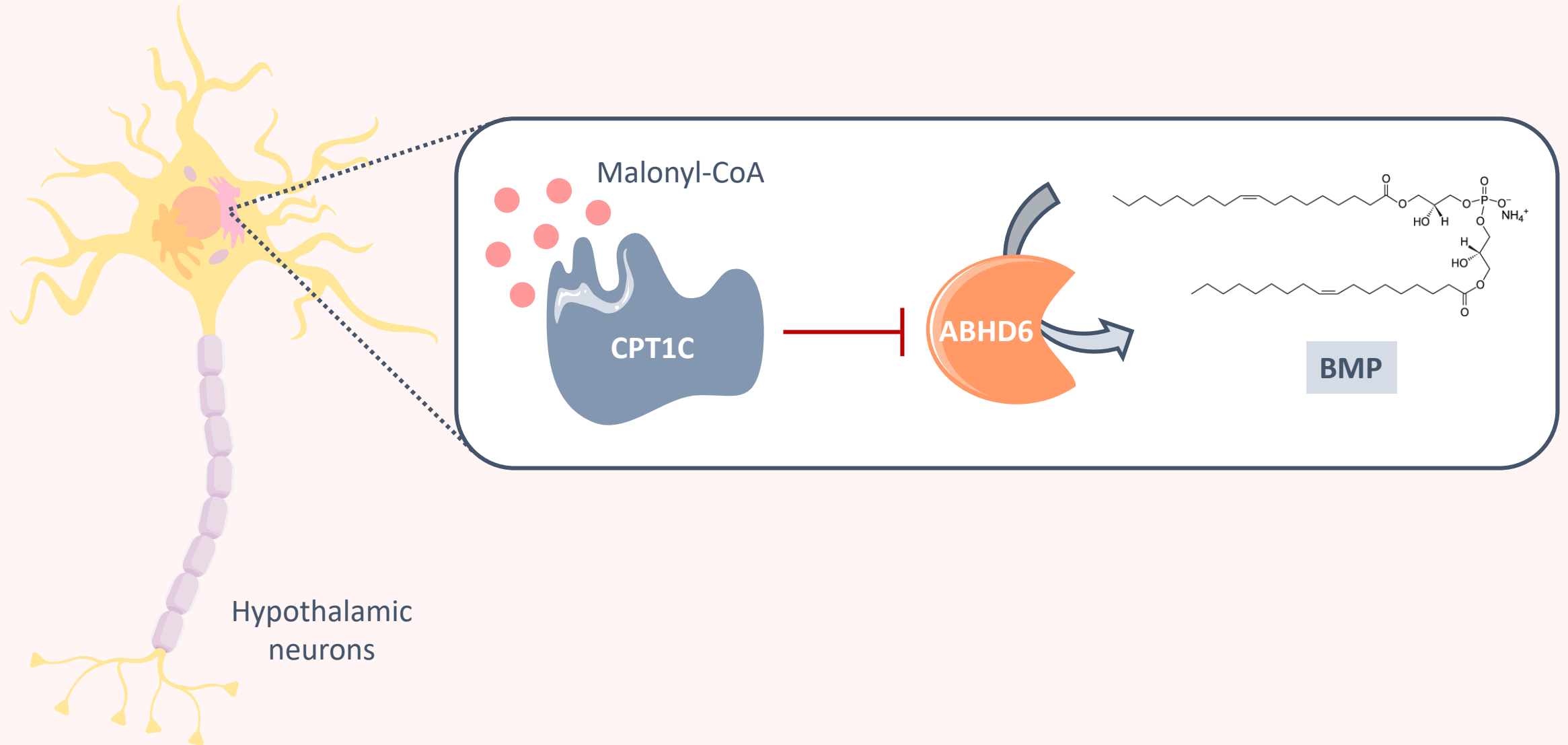


HYPOTHALAMUS



INTRODUCTION

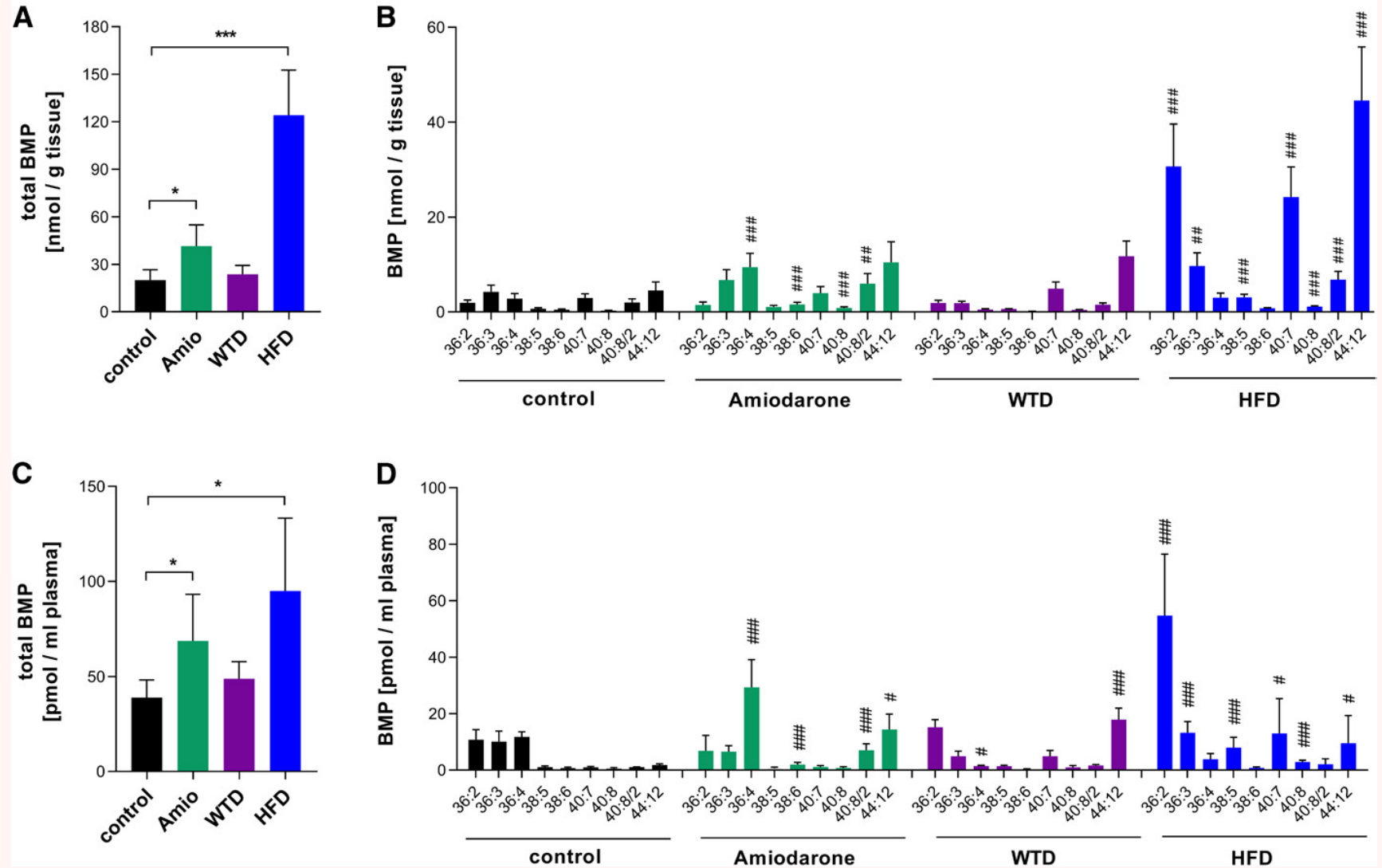
Hypothalamic ABHD6-CPT1C Axis in Obesity



INTRODUCTION

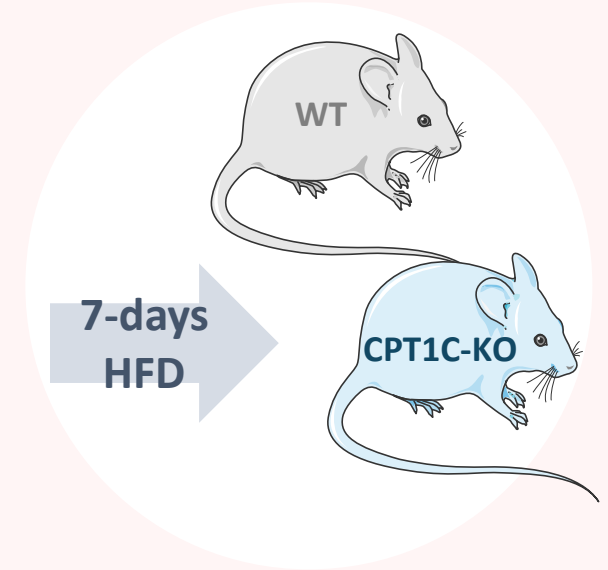
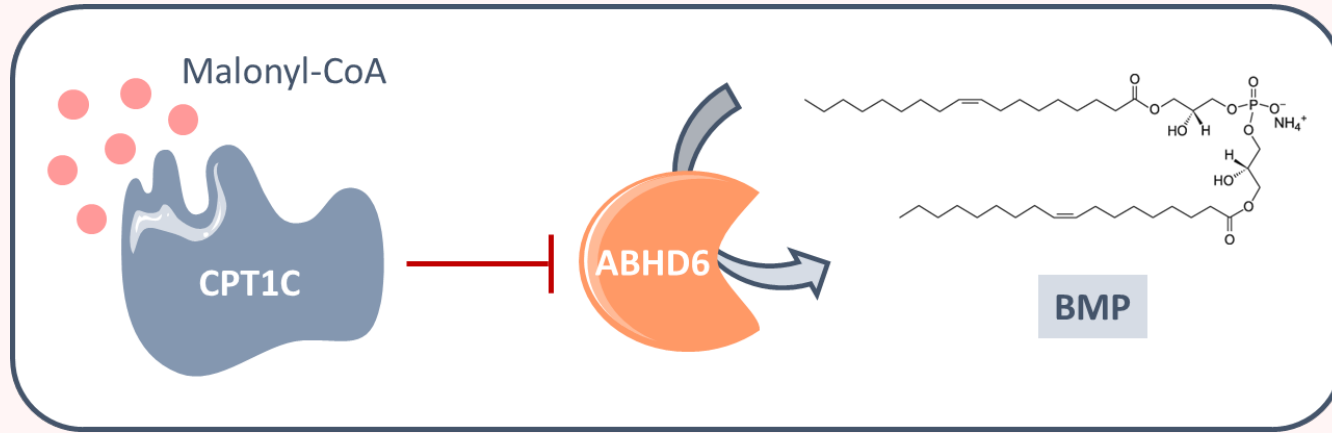
BMP metabolism in obesity

(Grabner et al. 2019)

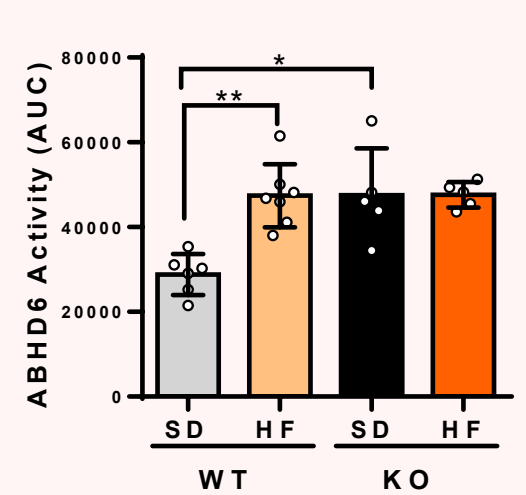
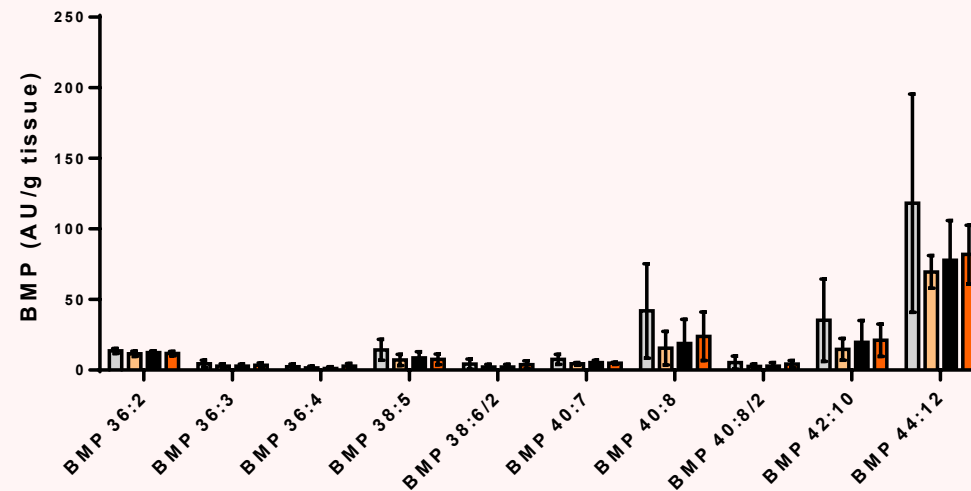
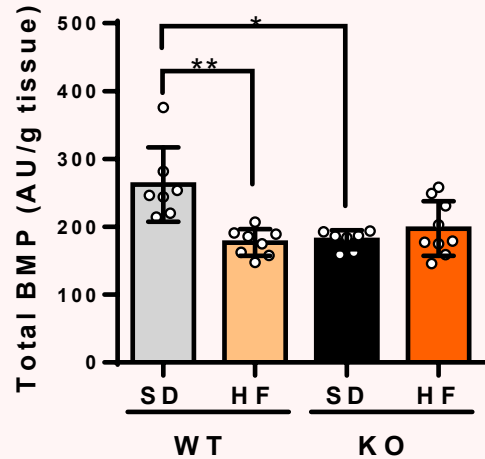


RESULTS

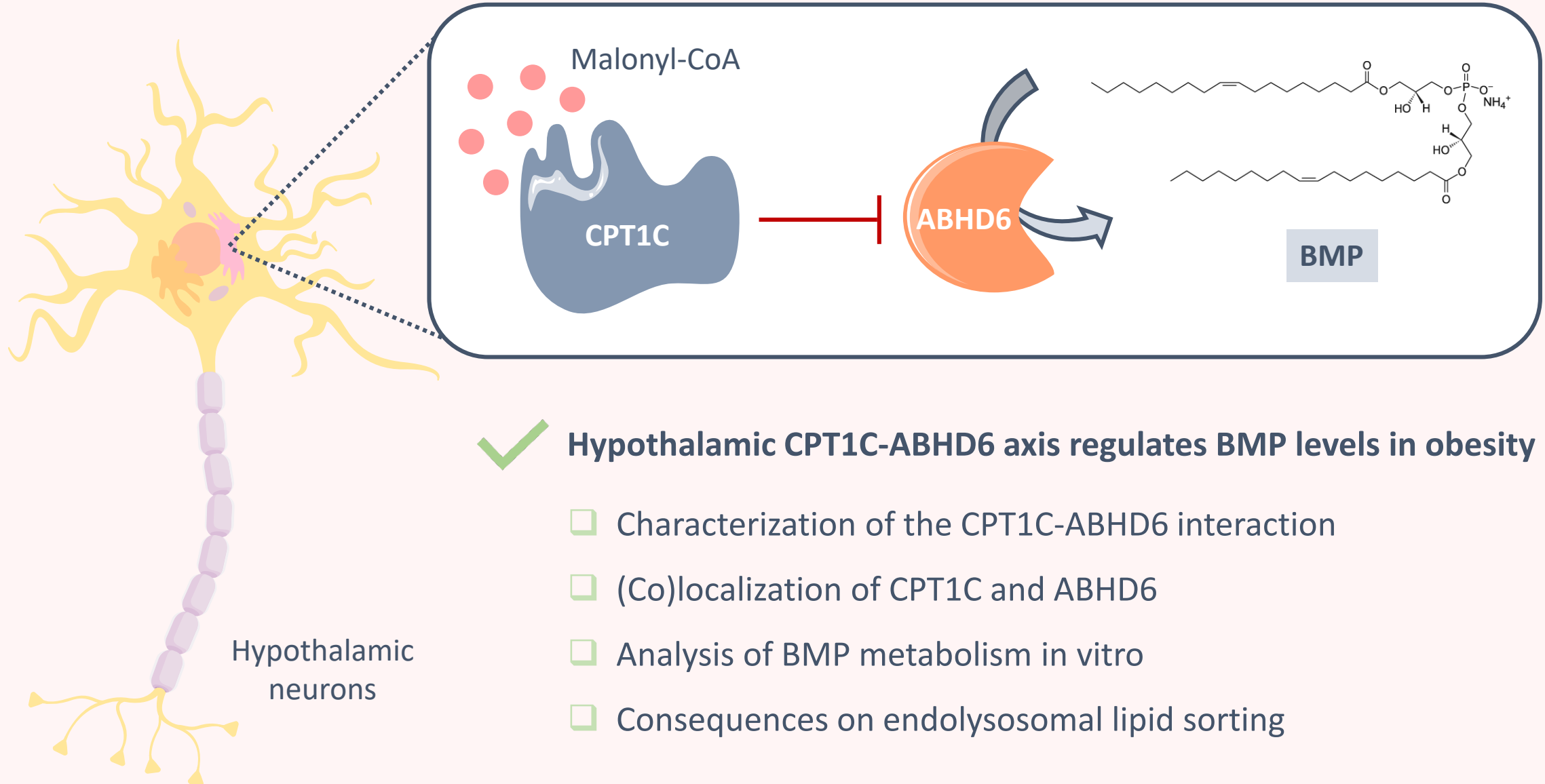
BMP levels and composition in CPT1C-KO mice



HYPOTHALAMUS



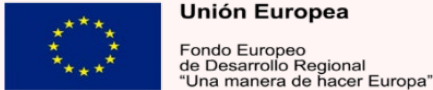
CONCLUSION & FUTURE PERSPECTIVES



Hypothalamic CPT1C-ABHD6 axis regulates BMP levels in obesity

- Characterization of the CPT1C-ABHD6 interaction
- (Co)localization of CPT1C and ABHD6
- Analysis of BMP metabolism in vitro
- Consequences on endolysosomal lipid sorting

 **Fundació**
La Marató de TV3



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THANK YOU ALL!



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