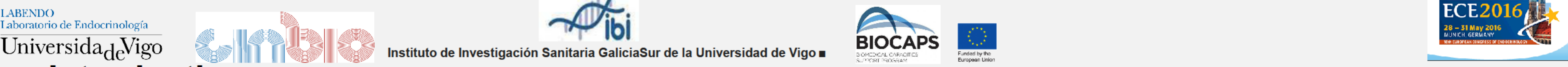


LIRAGLUTIDE RESTORES THE ENDOCRINE FUNCTION OF ISLET β -CELLS AND THE ALTERED LIPID PROFILE IN EARLY STAGES OF LIFE INDUCED BY FOOD RESTRICTION IN PREGNANCY

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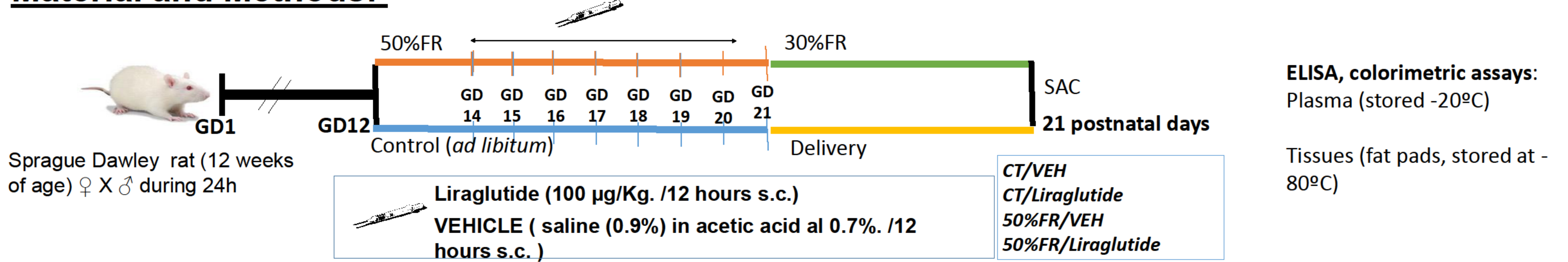


Introduction

Maternal food restriction during late pregnancy and lactation, decreases birth weight and leads to irreversible alterations in β -cell development, resulting in a decreased β -cell mass and insulin total content. These alterations increase the risk of glucose intolerance and metabolic diseases such as diabetes and obesity in adult life. Incretins as Exendin-4, are able of preventing the development of diabetes in litters from mothers under food restriction, normalizing glucose tolerance and rescuing β -cell mass decline.

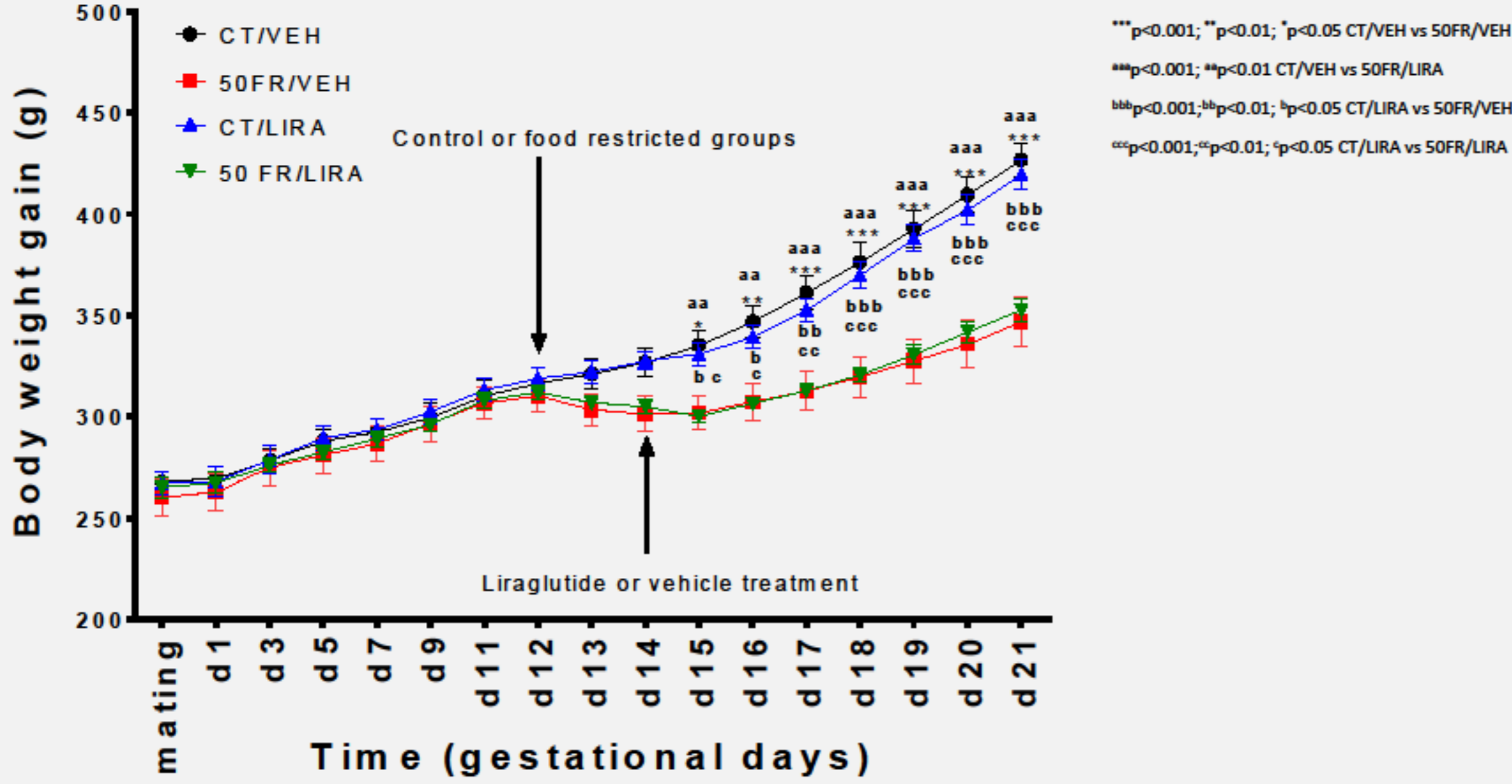
Aim of the study: To elucidate if liraglutide, a GLP-1 receptor agonist, administered to pregnant rats may prevent the deleterious effects of malnourishment in male pups analysed at 21 days.

Material and Methods:

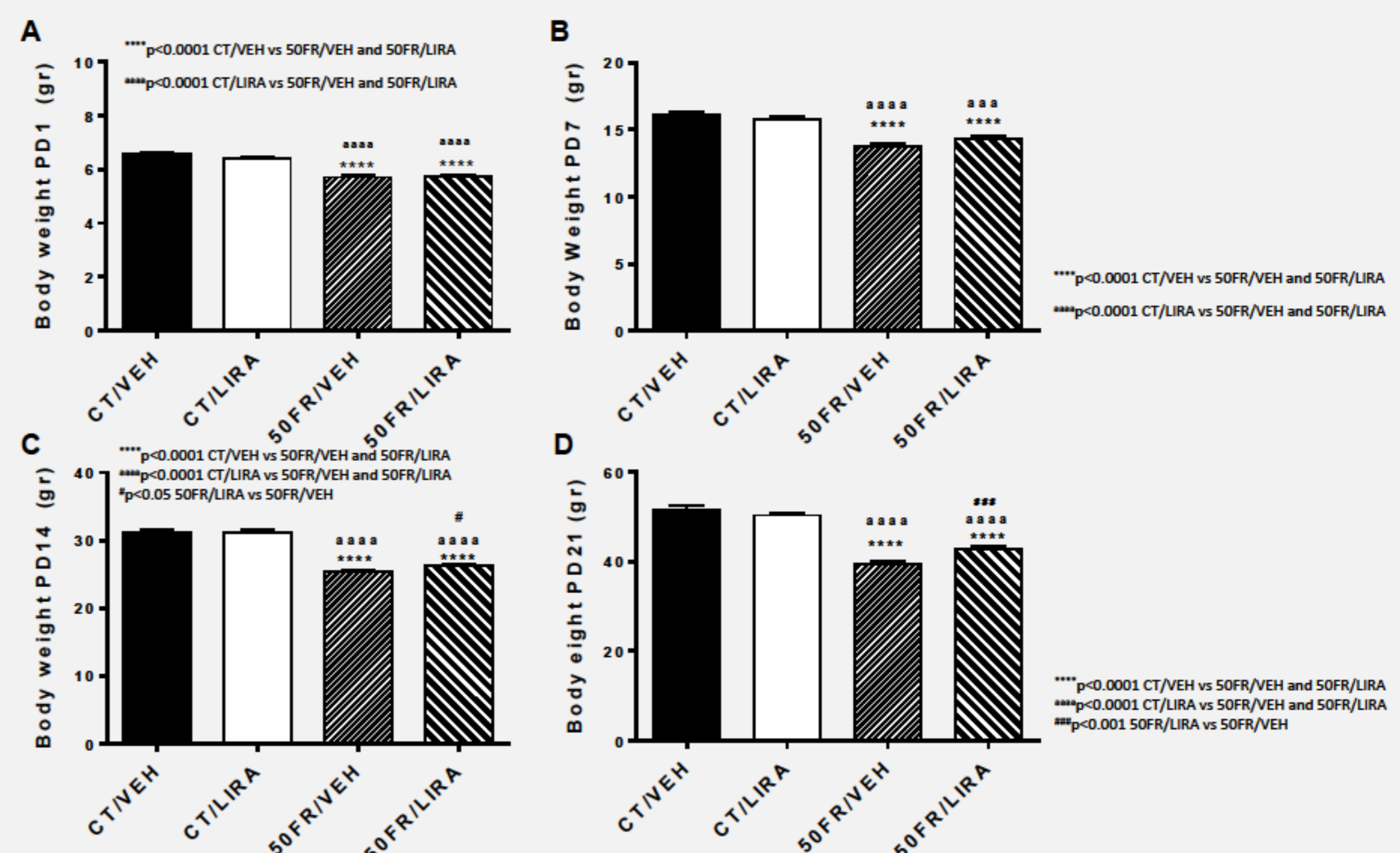


Results

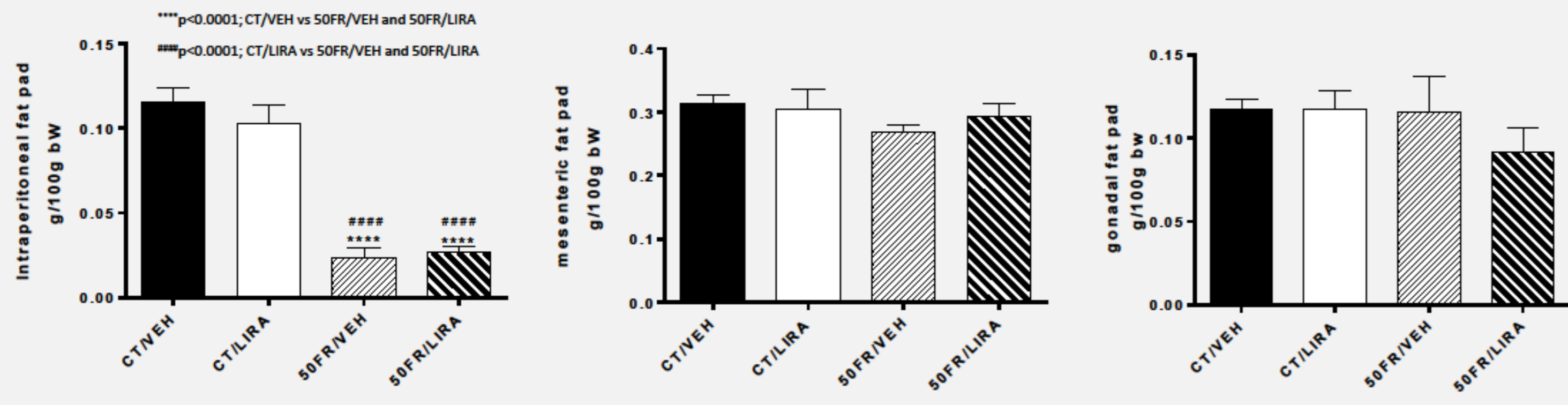
1. Food restriction decreased 16% body gain weight in pregnant dams



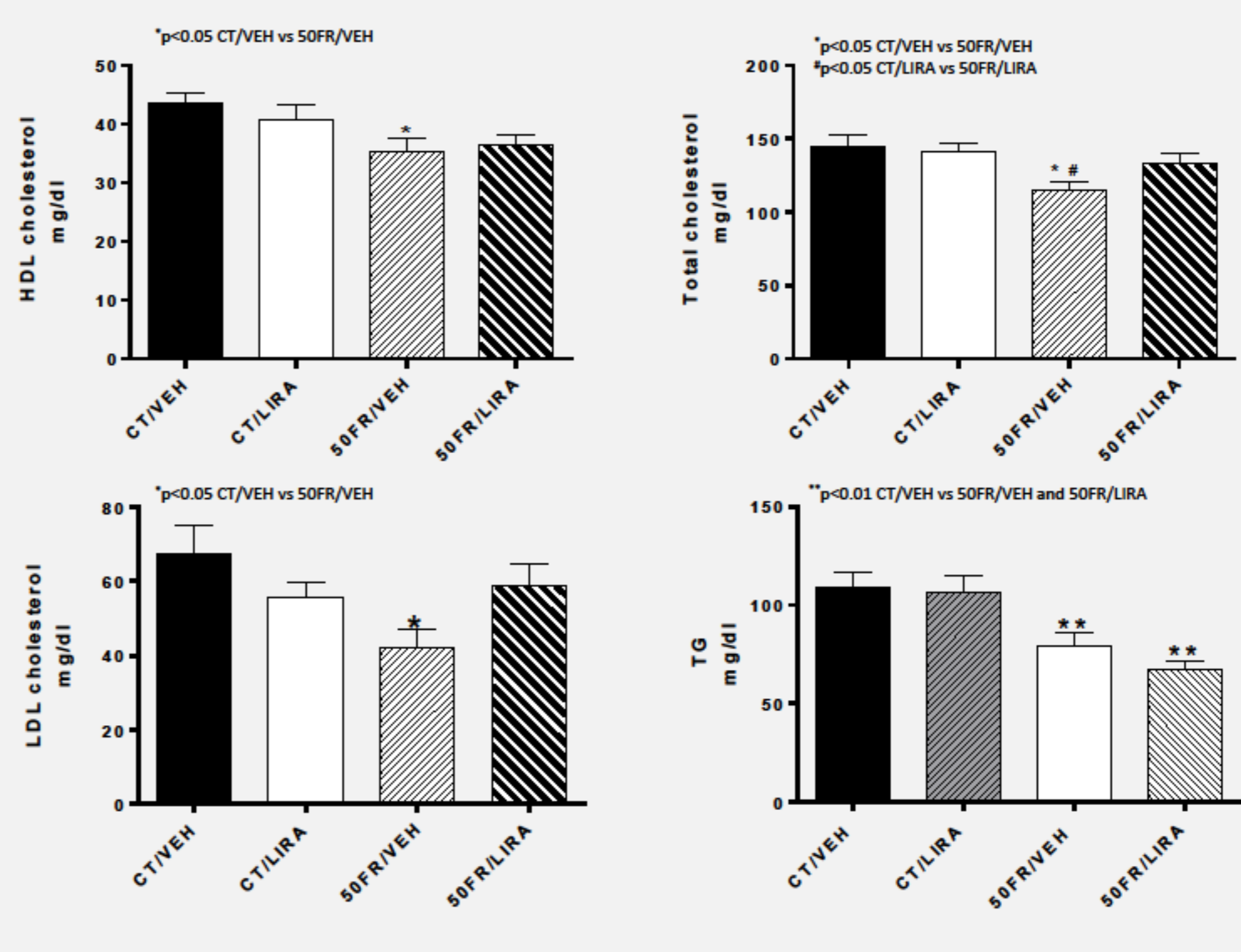
2. Pups from food restricted mothers displayed decreased body weight at pd1, pd7, pd14, pd21. Lira slightly but significantly increased BW in those animals at pd14 and pd28.



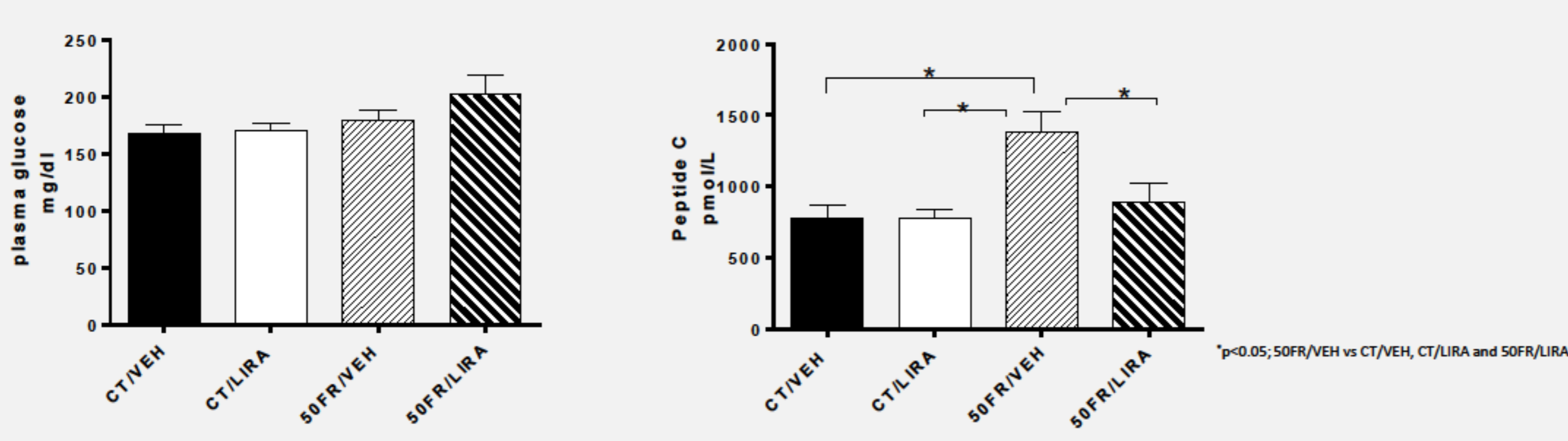
3. At pd21, intraperitoneal fat pad is decreased in pups from FR-mothers



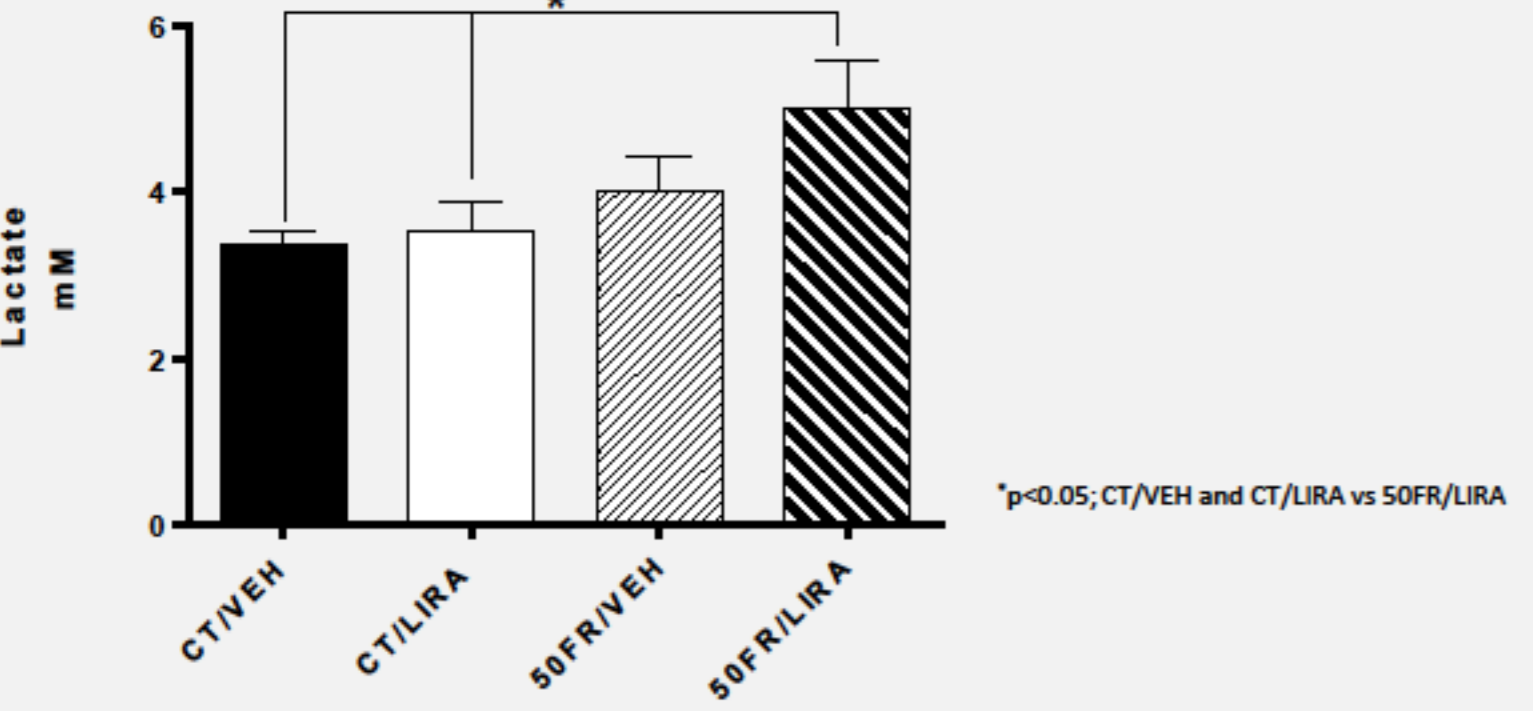
4. 50FR/VEH males displayed significantly reduced lipid levels.



5. Food restriction of the mother did not alter plasma glucose levels. 50FR/VEH males had increased peptide C plasma levels. Liraglutide treatment restored peptide C levels in males from FR-mothers



6. Liraglutide treatment increased lactate plasma levels just in 50FR males



Conclusion

Liraglutide treatment ameliorates the endocrine function of islet's β -cells and lipid profile in male pups from mothers under FR in pregnancy.