



In vivo individual tissue FFA storage rate

Gold-standard and unique solution for assessing the efficacy of your compound designed to treat type 2 diabetes and/or obesity on *in vivo* fatty acids turnover and incorporation in triglycerides, tissue by tissue

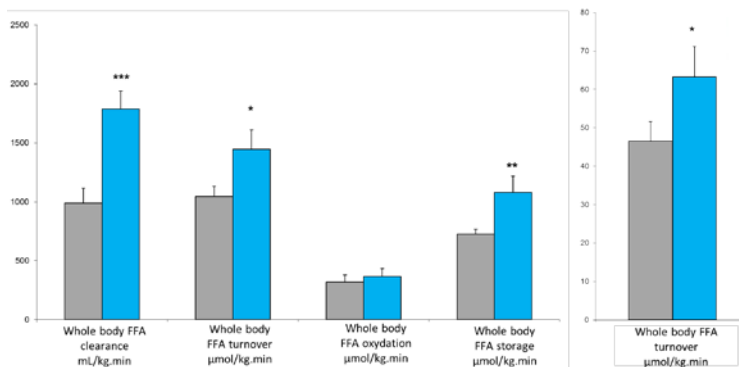
Key benefits :

- ✓ The **individual tissue technique using radiolabelled tracers** provides critical information on additional tissue-specific benefits as well as unwanted effects on key tissues for **rapid strategic decision-making**
- ✓ Information for stratifying future patient populations, with the effect of your compounds on specific tissues
- ✓ Insights for devising **ex vivo tissue assays** for screening your hit compounds
- ✓ Identifying additional **in vivo effects in specific tissues** that would not have been seen in any other type of experiment
- ✓ **Anticipating adverse effects** on major tissues: liver, heart, muscle, and adipose tissues

DESCRIPTION AND PARAMETERS EVALUATED

- Whole body free fatty acid turnover with specific emphasis on individual tissue TG incorporation and storage rates
- Species: rat, mouse
- Muscle fatty acids uptake and incorporation in the TG pool: Extensor digitorum longus (EDL), Vastus lateralis (VL), Soleus (SOL),...
- White (WAT) and brown (BAT) adipose tissue fatty acids uptake and incorporation in the TG pool : subcutaneous, visceral
- Organ fatty acids uptake and incorporation in the triglycerides pool : liver, heart, pancreas, ...

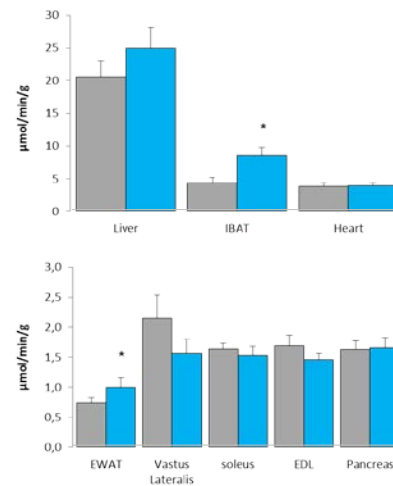
Whole body free fatty acids (FFA) fluxes in db/db mice



■ Vehicle
■ Rosiglitazone 30mg/kg (3 weeks treatment)

p<0.05 *, p<0.01 **, p<0.001 *** vs vehicle

In vivo individual tissue free fatty acids (FFA) storage rate in db/db mice



ADD-ON STUDIES

- Tissue lipid content
- Tissue *ex vivo* free fatty acid oxidation
- *In vivo* and *ex vivo* lipolysis
- *In vivo* lipogenesis

REFERENCES

Girousse A, Tavernier G, Valle C, Moro C, Mejhert N, Dinel AL, Houssier M, Roussel B, Besse-Patin A, Combes M, Mir L, Monbrun L, Bézaire V, Prunet-Marcassus B, Waget A, Vila I, Caspar-Bauguil S, Louche K, Marques MA, Mairal A, Renoud ML, Galitzky J, Holm C, Mouisel E, Thalamas C, Viguier N, Sulpice T, Burcelin R, Arner P, Langin D.
Partial inhibition of adipose tissue lipolysis improves glucose metabolism and insulin sensitivity without alteration of fat mass. PLOS Biology. 2013 Feb;11(2)