Key benefits

For the last two decades a growing body of evidences demonstrate the key role of the immune system on low grade inflammation in various tissues leading to metabolic diseases. Importantly, a gut microbiota dysbiosis leads to a leaky gut featured by an impaired intestinal immune defense triggering the low grade inflammation and inducing insulin resistance, body weight gain, hyperglycemia, hepatic steatosis and kidney failure to cite a few. Therefore, characterizing the immune cells in different body compartments is a must do in all metabolic studies.

We offer to characterize cells from the immune compartment to demonstrate the benefits of your drug on metabolic diseases. Combined with our in vivo experiments, and using Fluorescence-Activated Cell Sorting (FACS) analyses we validate the efficacy of your treatment

• Through the characterization of a current panel of innate and adaptive immune cells in metabolic tissues (e.g. adipose tissue, liver, intestine...)
• Simultaneously on both the immune system and metabolic parameters
• On different tailor made animal models (high fat fed-induced insulin resistance, obesity, NASH in mice (suitable to all mouse models)

**PIOGLITAZONE IMPROVES GLUCOSE HOMEOSTASIS IN HFD MICE**

A: Frequency of hematopoietic cells; B: lymphocytes; C: CD4+ lymphocytes; D: T-Reg CD4+ lymphocytes; E: macrophages; F: Dendritic cells

**PIOGLITAZONE IMPACTS IMMUNE CELLS POPULATION IN MESENTERIC ADIPOSE TISSUE OF HFD MICE**

A: Frequency of hematopoietic cells; B: lymphocytes; C: CD4+ lymphocytes; D: T-Reg CD4+ lymphocytes; E: IL17 producing lymphocytes; F: macrophages; G: Dendritic cells

**PIOGLITAZONE IMPACTS IMMUNE CELLS POPULATION IN THE INTESTINAL LAMINA PROPRIA**

A: % CD45+; B: % CD45+ CD3+; C: % CD45+ CD4+; D: % CD45+ CD4+ Foxp3+ (Treg); E: % CD45+ CD3- F480+ (Macro); F: % CD45+ CD3- CD11c+ (DC)

We here offer a tailor made in vivo screening process to validate bioactive strategies on both the causal role of the low grade inflammation and its metabolic impacts.

*We have previously demonstrated that Pioglitazone improves glucose homeostasis and reduces blood glucose levels during an OGTT (A) and increases glucose infusion rate (in vivo measure of insulin sensitivity) during a hyperinsulinemic euglycemic clamp (B).

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**PIOGITAZONE IMPROVES IMMUNE CELLS ORGANIZATION IN HFD MICE**

A: % CD45+; B: % CD45+ CD3+; C: % CD45+ CD4+; D: % CD45+ CD4+ Foxp3+ (Treg); E: % CD45+ CD3- F480+ (Macro); F: % CD45+ CD3- CD11c+ (DC)

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