Unique diet-induced hamster model of non-alcoholic steatohepatitis (NASH)

The only model replicating the side-effects observed with FXR agonist obeticholic acid in humans

**Key benefits**

Unique proprietary diet-induced hamster model that enables the evaluation of novel drugs targeting NASH and fibrosis in comparison with the benchmark obeticholic acid, in a human-like context.

The diet–induced DIN™ NASH hamster provides:

- Unlike mice and rats, a nutritional model closer to the human situation with similar cholesterol and bile acids metabolism.
- A pharmacologically validated model with the benchmark FXR agonist obeticholic acid with the similar benefits (body weight, liver inflammation reduction) and side-effects (increased LDL-cholesterol and reduced HDL-cholesterol) observed in humans.

**ANIMAL MODEL**

- **Background strain/gender:** Golden Syrian Hamster, male
- **In house “Diet-Induced NASH” (DIN™):** cafeteria diet (choice between a normal chow diet + normal tap water or high fat/high cholesterol + fructose in drinking water for 25 weeks)
- **Reference compounds:** FXR agonist Obeticholic Acid (OCA) 15mg/kg/day in the diet
- **Experimental design:**

**MODEL CHARACTERISTICS**

**Cafeteria diet induces obesity, insulin resistance, hypercholesterolemia and higher ALT levels**

- Food intake (A), water intake (B), daily caloric intake (C), body weight (D), fasting blood glucose, plasma insulin and HOMA-IR index of insulin resistance (E), plasma total cholesterol and LDL-cholesterol (F), plasma ALT after 20 weeks of chow or cafeteria diet.

- *p<0.05, **p<0.01 and ***p<0.001 vs. chow

**OCA induces body weight loss, but raises CETP activity and LDL-cholesterol, and reduces HDL-cholesterol levels**

**OCA reduces liver inflammation but does not improve NAFLD score in all individuals**

**Lever aspect, representative histology (1: chow; 2: cafeteria; 3: cafeteria + obeticholic acid showing NAFLD improvement; 4: cafeteria + obeticholic acid showing no NAFLD improvement), and NAFLD scoring.**

***p<0.001 cafeteria vs. chow, #p<0.05 and ##p<0.01 cafeteria vs. cafeteria + obeticholic acid**

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