STRENGTHENING HEALTH CLAIM DOSSIERS WITH ANIMAL RESEARCH

TNO innovation for life

Rapid assessment of potential health benefits of diets can be performed in a number of animal models operated at TNO. Experience is present with a broad spectrum of study designs and a wealth of read-out possibilities and physiologic-dynamic measurements.

In building solid evidence for health claim dossiers for dietary components or foods, studies in animals sometimes may be indispensable. Prior to running a clinical trial, animal models allow in-depth study of mode-of-action. Moreover, within a reasonable time frame, even studying effects of diet on the induction of overt disease conditions is possible. Another advantage of using animal models is that results in general show less variability than those obtained in human intervention studies. In addition, models for specific target populations can be studied (e.g. infants, metabolic syndrome, CVD risk groups and more).

TNO's expertise is built on decades of experience in animal models and is solidly connected to in depth knowledge of human physiology in nutritional health. State-of-the-art technologies and know how are present, which allows the design of custom made studies to address the objectives of our customers. All animal studies are approved by TNO's animal ethics board, ensuring that animals are not subjected to unnecessary burden. TNO's animal facilities have recently been upgraded to meet the highest FELASA standards. In combination with our fully confidential operations, professional project management and customer communication, TNO's animal research services add scientific quality and speed to your health claim dossier development.

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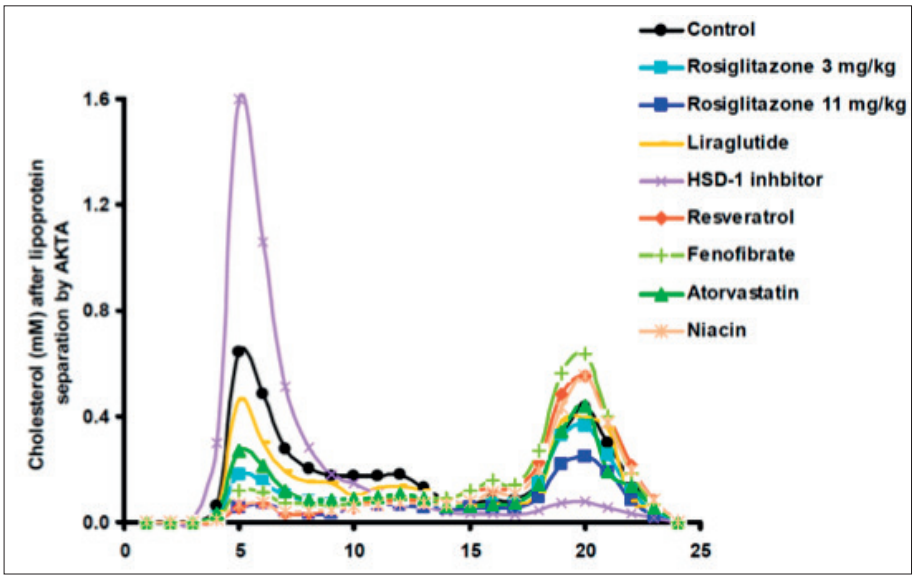

*Fig. 1. Cholesterol (VLDL and HDL) profiles in ApoE*3/CETP mice and response to different treatments.*

HEALTH AREAS AND INTERVENTIONS

In *cardiovascular health*, TNO offers one of the most sophisticated and well-studied mouse models in the world. This APOE*3-Leiden transgenic mouse together with the further advanced APOE*3-Leiden/huCETP mouse displays human-like lipid and lipoprotein metabolism which respond similarly to drug and dietary interventions as humans do (Fig. 1). Using western-type, cholesterol and fat containing diets, the mice display various stages of disease development.

For studying dietary effects on modulation of *diabetes type II* and diabetic complications, the LDLR-/- mouse model can be used.
In another model, modulation of *inflammatory bowel disease (IBD)* can been studied. IBD can be elicited as an acute or maintained as a chronic condition in this model.
Other models operated at TNO include models for contact *hypersensitivity, eczema (atopic dermatitis), psoriasis* and *osteoarthritis* (inflammation of joint cartilage).

CHALLENGE TESTS

In demonstrating health benefits, specific study designs can be applied which includes application of mild stressors. Such stressors allow to monitor the response and ability to recover of the animal. This approach fits within the concept of regarding resilience as indicator of health status, which is adopted by TNO in human nutritional health research.

Animal studies are offered on a fee for service basis.

REFERENCES

For each of the models and platforms more information and a list of publications will be sent upon request. Most studies can be found in Pubmed using ‘TNO’ and ‘mice’ as search keys.

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