History of the development of WHHL, and WHHLMI rabbits

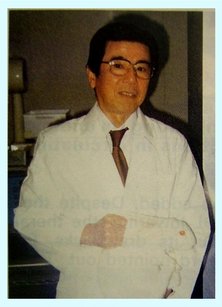
Masashi Shiomi（Institute for Experimental Animals, Kobe University Graduate School of Medicine）

History of WHHL rabbits

1973 Dr. Watanabe discovered a mutant rabbit showing hyperlipidemia

He confirmed inheritance of hyperlipidemia and named it HLR

A male mutant rabbit



Dr. Yoshio Watanabe

1980 **He established as a strain and named it WHHL**

(*Atherosclerosis* 1980;36: 261-268)

He began providing WHHL rabbits to researchers all of the world.

WHHL rabbits contributed to studies about lipoprotein metabolism and atherosclerosis.

1985 **Development of coronary atherosclerosis-prone WHHL rabbits**

(*Atherosclerosis* 1985;56: 71-79)

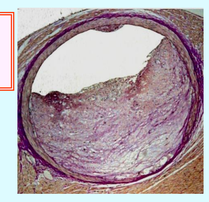
WHHL rabbits contributed to studies about lipoprotein metabolism and atherosclerosis.

WHHL rabbits contributed to the development of statins

Studies using WHHL rabbits proved that statins suppress arteriosclerosis.

1992 **Development of WHHL with severe coronary lesions (WHHLCA)**

(*Atherosclerosis* 1982;96: 431-528)



Development of a method for quantitative analysis of atherosclerotic constituents

(*Arterioscler Thromb* 1994;14: 931-937)

Clarification of statin's atherosclerotic lesion stabilizing effect

(*Arterioscler Thromb* Vasc Biol 1995;15: 1938-1944)

Metabolic syndrome-like findings in WHHLCA rabbits

(*Atherosclerosis* 1999;142: 345-353)

WHHL rabbits contribute to development of various lipid lowering agents

朝日新聞 1985 年 10 月 19 日

ノーベル科学三賞

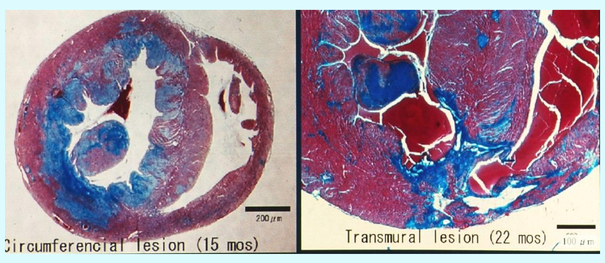
メタボウサギ作製

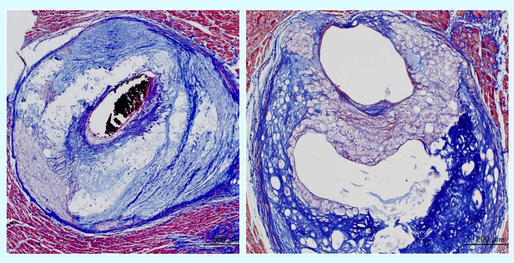
神戸大、研究用に

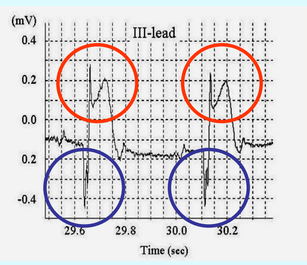
人と似た症状示す

1999 Development of WHHLMI rabbits, which develop myocardial infarction spontaneously.

(*Arterioscler Thromb Vasc Biol* 2003;23: 1239-1244)







讀賣新聞 2003 年 7 月 11 日（金）

心筋こうそく100％発症ウサギ 神戸大チーム開発

治療薬など期待

WHHLMI rabbits contribute to the development of atherosclerosis imaging diagnostic technologies (MR, CT, PET, IVUS)

WHHL rabbits contribute to development of various lipid lowering agents

2012 ACS induced in WHHLMI rabbits with coronary spasm

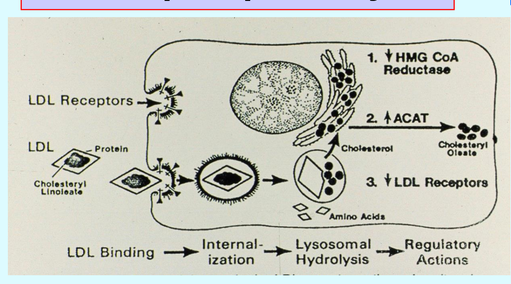
(*Arterioscler Thromb* Vasc Biol 2013;33:2518-2523)

2018 Identification of serum markers specific for coronary lesions (*Atherosclerosis* 2019, in press)

Close the WHHLMI rabbit colony at Kobe university

Related news

Hypothesis of LDL receptor pathway



Discovery of statin

Serum cholesterol levels are related to heart disease.

Elucidation of LDL metabolism

LDL receptor research using WHHL won the Nobel Prize in 1985.

Statins released continuously.

Plaque stabilization hypothesis of statins

Research fields using the WHHLMI rabbit

Studies on pathophysiology and the mechanism	Atherosclerosis, Myocardial infarction, Acute coronary syndromes, Hypercholesterolemia, Low HDL, Metabolic syndrome, Xanthoma, Dysuria
Studies on therapeutic methods, diagnostic methods, etc.	Imaging diagnostic methods for atherosclerosis, Serum markers for coronary lesions, Therapeutic drugs for the above diseases, Gene therapy, Regenerative medicine