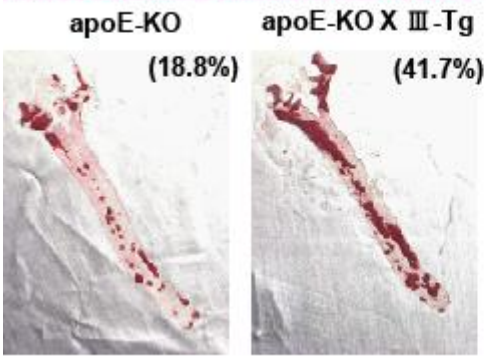
Tg/KO Mice of sPLA2 Isozymes as Research Tool for Drug Discovery and Diagnostics

Technology Summary

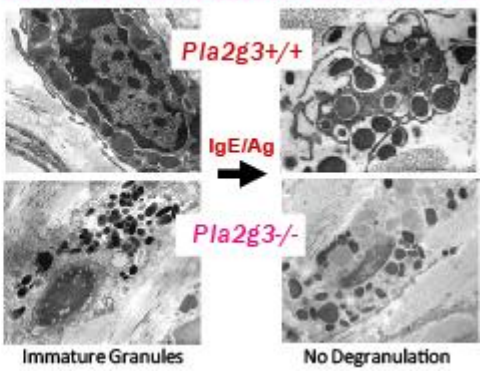
Our researchers have established genetically modified mice which are useful as research tool for drug discovery as well as diagnostics. Overexpressing and knockout mice of secreted phospholipase A2 (sPLA2) isozymes, which have been established by our researchers, are listed in the following table with their phenotypes

sPLA2 Isozyme	Tg or KO	Phenotype
PLA2G3	Tg	Exacerbation of Anaphylaxis, Arteriosclerosis and Metabolic Syndrome; and Systemic inflammation
	KO	Male Infertility; Improvement of Anaphylaxis and Metabolic Syndrome
PLA2G5	Tg	Fatal Lung Disorder
PLA2G10	Tg	Hair Loss and Acanthosis; Leanness; Reduction of Plasma Lipoproteins; and Exacerbation of Peripheral Pain
PLA2G2F	Tg	Hair Loss and Acanthosis

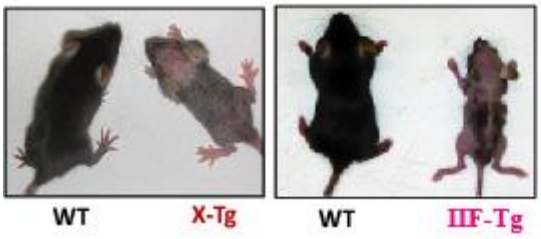
Exacerbation of Anaphylaxis in PLA2G3 Tg mouse



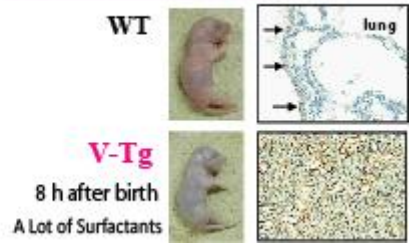
Anaphylaxis (Degranulation) by Expression of PLA2G3



Hair Loss in PLA2G10Tg mouse and PLA2G2F Tg mouse



Fatal Lung Disorder in PLA2G5 Tg mouse



Moreover our researchers have a deep understanding of not only the above-mentioned sPLA2 isozymes but also other sPLA2 isozymes. Their knowledge would also be helpful for your research and development.

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Publications about sPLA2

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2. Yamamoto, K., Murakami, M., et al. (2011) Hair follicular expression and function of group X secreted phospholipase A2 in mouse skin. J. Biol. Chem. 286, 11616 -11631

3. Sato, H., Murakami, M., et al. (2011) Physiological roles of group X secreted phospholipase A2 in reproduction, gastrointestinal phospholipid digestion, and neuronal function. J. Biol. Chem. 286, 11632-11648

4. Yamamoto, K., Murakami, M., et al. (2011) Secreted phospholipase A2, lipoprotein hydrolysis, and atherosclerosis: integration with lipidomics. Anal. Bioanal. Chem. 400, 1829-1842

5. Sato, H., Murakami, M., et al. (2010) Group III secreted phospholipase A2 regulates epididymal sperm maturation and fertility in mice. J. Clin. Invest. 120, 1400-1414

6. Sato, H., Murakami, M., et al. (2009) Group III secreted phospholipase A2 transgenic mice spontaneously develop inflammation. Biochem. J. 421, 17-27

7. Sato, H., Murakami, M., et al. (2008) Analyses of group III secreted phospholipase A2 transgenic mice reveals potential participation of this enzyme in plasma lipoprotein modification, macrophage foam cell formation, and atherosclerosis. J. Biol. Chem. 283, 33483-33497

8. Ohtsuki, M., Murakami, M., et al. (2006) Transgenic expression of group V, but not group X, secreted phospholipase A2 in mice leads to neonatal lethality because of lung dysfunction. J. Biol. Chem. 281, 36420-36433

Business Proposal

We propose a material transfer of mice in the above list to you, and also we can arrange a collaborative research related with sPLA2

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