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Age-related change of biological data in SAMP8/Ta and SAMR1TA mice

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Several strains of SAM(Senescence accelerated mice) that show senile cataract, senile osteoporosis, rapid appearance of deficits in learning and memory, short life span and loss of skin glossiness have been developed for the study of aging. SAMP8/Ta and SAMR1TA mice were obtained from the original developer and bred under SPF(specific pathogen free) condition in KRICT. In order to study the basic characters of SAMP8/Ta and SAMR1TA, we analyzed body weight, organ weight, hematologcal data, biochemical data of blood and urine, lipid peroxidation, GSH(glutathione) content and the activity of SOD(superoxide dismutase) with age. At 13 months of age, the weight of thymus of male SAMP8/Ta and ovaries in female of both strains were shrinked. Lipid peroxidation and GSH did not show significantly change with age. WBC of SAMR1TA male increased at 13 months of age. In both the strains, the activity of SOD increased with age in female but it did not change in male.

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Identification of Genomic Sequence of Soybean Oilbody Membrane Protein 24 KDa Oleosin Gene and Purification of 24 KDa Oleosin Protein from Soybean Seeds

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The storage triacylglycerol in seeds is confined to discrete spherical organelles called oilbodies. Each oilbody contains a matrix of triacylglycerols surrounded by a layer of phospholipids embedded with oleosins. Oleosins are hydrophobic proteins of low molecular weight ranging from 16-26 KDa, depending on the isoforms and plant species. Their possible functions include stabilizing the oilbodies and providing signal recognition for the specific binding of lipase during germination. Oleosins are expressed only in embryo in developmentally controlled manner.

The soybean 24 KDa oleosin exists in a doublet. We have screened a large one using a part (272 bp) of a small one as a probe, and then sequenced its genomic DNA including promoter region by serial-deletion method. On the other hand, we purified 24 KDa oleosin from soybean seeds via SDS-PAGE for antibody production. We will transform carrot hypocotyl with the 24 KDa oleosin gene, convert transformed callus into embryogenic culture and screen the soybean oleosin by Western blot.