R26-CAG-LSL-mCherry-EGFP-LC3

品系全名	C57BL/6JSmo-*Gt(ROSA)26Sor*$^{em1(CAG-LSL-mCherry-EGFP-Map1lc3a-pA)Smoc}$
目录号	NM-KI-00124
品系状态	活体

基因信息

基因名 **Gt(ROSA)26Sor**	**基因曾用名**	R26，ROSA26，AV258896，Gtrgeo26，Gtrosa26，Thumpd3as1
	NCBI ID	14910
	MGI ID	104735
	Ensembl ID	ENSMUSG00000086429

品系描述

在Rosa26基因位点定点插入CAG promoter-loxp-stop-loxp-mCherry-EGFP-Map1lc3a-WPRE-polyA表达框。Map1lc3a也就是LC3，是一个广泛表达的自噬小泡特异标志物。该基因Rosa26位点条件性过表达杂合子小鼠无明显异常，loxp-stop-loxp表达框的存在阻止了下游目的基因LC3的转录，与Cre小鼠交配后，在其后代双阳性小鼠中，Cre表达的组织和细胞类型，loxp-stop-loxp表达框将被敲除，目的基因LC3在CAG启动子的驱动下，在缺血性损伤后的吞噬细胞中以pH依赖性方式表达mCherry和EGFP。两个共同表达的荧光信号根据自噬小泡在细胞内的酸性环境变化而变化。mCherry在酸性环境（pKa 4.5）为稳定，而EGFP在溶酶体内的酸性环境(pKa 5.9)中会发生淬灭现象。这一特性使得细胞自噬现象根据细胞自身溶酶体工作与否区分开来。在pH较高的自噬小泡中，GFP与mCherry的荧光叠加呈现黄色荧光；而在pH较低的溶酶体中，EGFP淬灭，只能检测到红色荧光信号。可用于标记及追踪LC3、研究缺血性损伤后各种组织中自噬的起源、进展和消失。

*使用本品系发表的文献需注明: R26-CAG-LSL-mCherry-EGFP-LC3 mice (Cat. NO. NM-KI-00124) were purchased from Shanghai Model Organisms Center, Inc..

验证数据

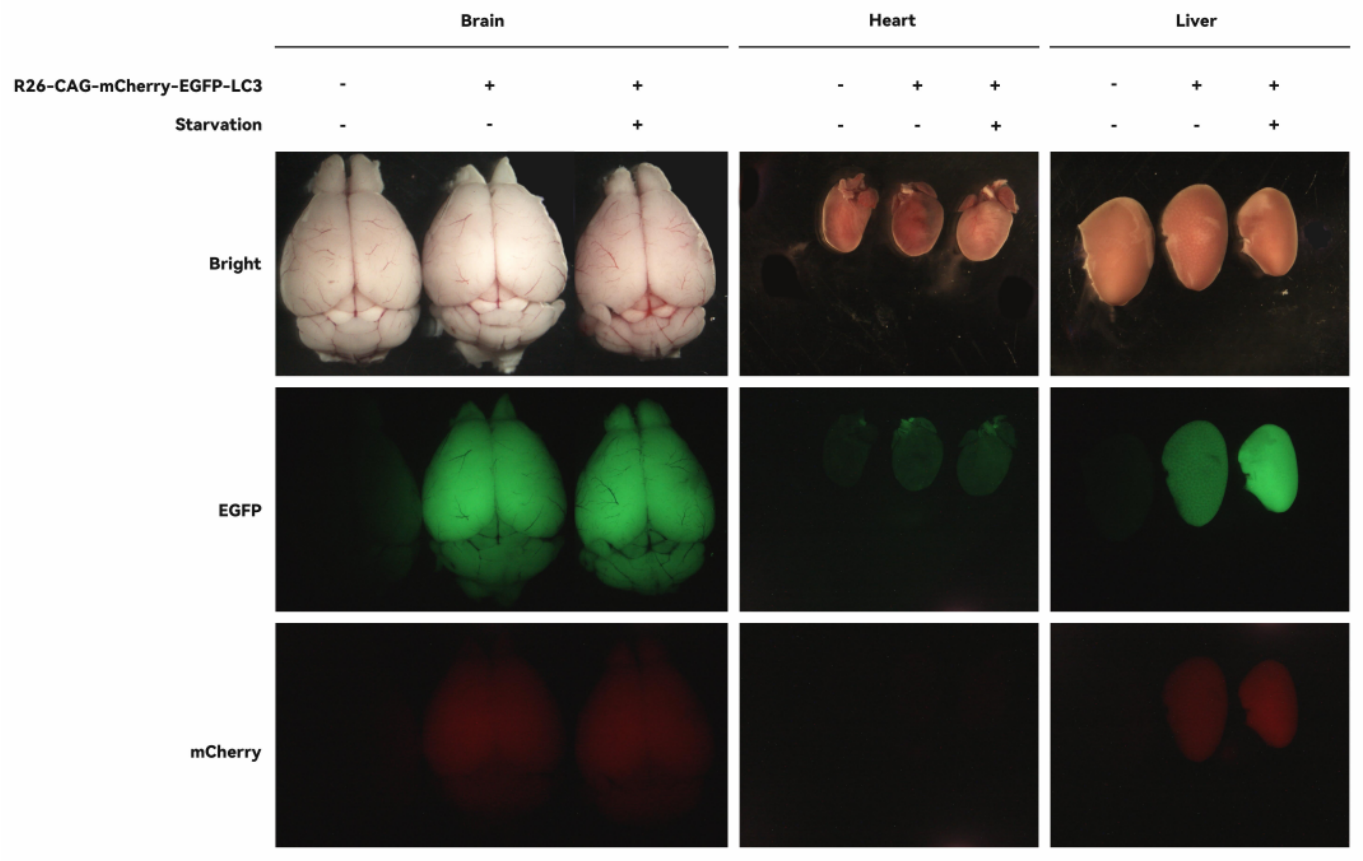

Fig1. Detection of EGFP and RFP fluorescence intensity in brain, heart and liver tissues of R26-CAG-mCherry-EGFP-LC3$^{+/-}$, DPPA3-Cre$^{+/-}$ mice. Starvation(+): The mice were fasted for 48 hours; Starvation(-): The mice were fed normally.

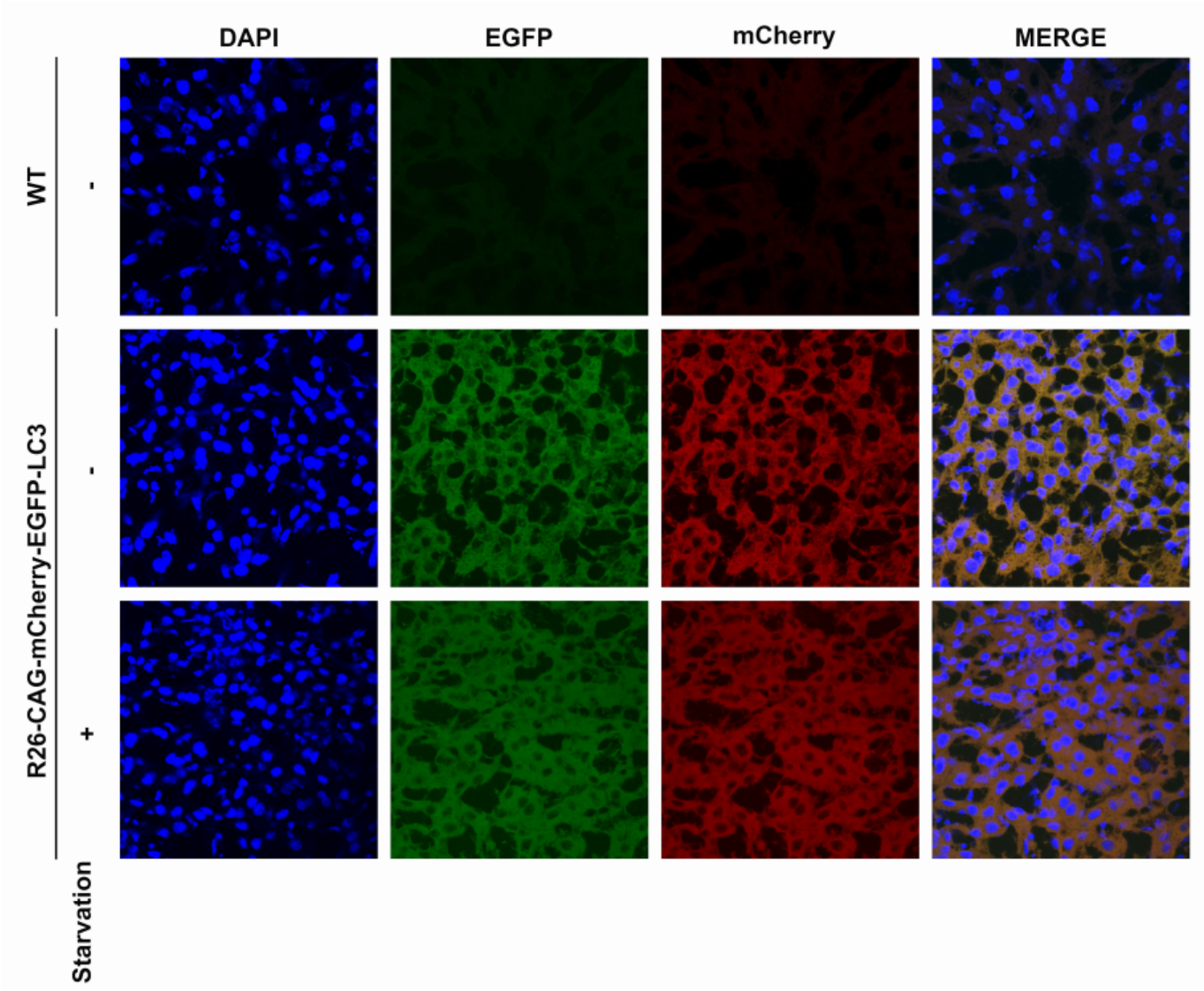

Fig2. Detection of EGFP and RFP puncta in liver tissue sections of R26-CAG-mCherry-EGFP-LC3$_{+/-}$, DPPA3-Cre$_{+/-}$ mice. Starvation for 48 h increased the ratio of RFP/EGFP fluorescence expression in liver tissue of R26-CAG-mCherry-EGFP-LC3$_{+/-}$, DPPA3-Cre$_{+/-}$ mice. These results suggested there was increased fusion of autophagosomes with lysosomes after 48h starvation. Starvation(+): The mice were fasted for 48 hours; Starvation(-): The mice were fed normally.

发表文献

Macrophage autophagy protects against acute kidney injury by inhibiting renal inflammation through the degradation of TARM1
来源杂志：Autophagy

Exploring the Link Between Autophagy-Lysosomal Dysfunction and Early Heterotopic Ossification in Tendons

来源杂志：Advanced Science

Neuron-specific deficiency of autophagy increases neuronal loss in traumatic brain injury
来源杂志：PNAS Nexus

RIP3 impedes transcription factor EB to suppress autophagic degradation in septic acute kidney injury
来源杂志：Cell Death & Disease

Asiatic acid alleviates cisplatin-induced renal fibrosis in tumor-bearing mice by improving the TFEB-mediated autophagy-lysosome pathway
来源杂志：BIOMEDICINE & PHARMACOTHERAPY