

# 比较研究C57BL/6和eNOS-/-小鼠1型糖尿病模型的视网膜病变 [\(点击查看pdf全文\)](#)

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**Title:** Comparative study of retinopathy in C57BL/6and eNOS-knockout mouse models of type 1diabetes mellitus

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**关键词:** [eNOS基因敲除小鼠](#); [糖尿病视网膜病变](#); [糖尿病](#); [视网膜电图](#); [神经节细胞](#)

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**摘要:** 目的对链脲佐菌素 (STZ) 诱导的C57BL/6和eNOS基因敲除 (eNOS-/-) 小鼠1型糖尿病模型 (T1DM) 进行对比研究, 探讨两类糖尿病小鼠模型的视网膜功能及视网膜血管的病理变化。方法6~8周龄的C57BL/6和eNOS-/-小鼠腹腔内注射STZ建立T1DM模型。模型建立前后分别行视网膜电图 (ERG) 检查、荧光血管造影、免疫荧光染色及视网膜神经节细胞计数。结果C57BL/6和eNOS-/-糖尿病小鼠ERGa、b波振幅降低、神经节细胞减少 (P<0.05), eNOS-/-糖尿病小鼠视网膜血管迂曲、纤细。与C57BL/6糖尿病小鼠相比, eNOS-/-糖尿病小鼠的视网膜功能及视网膜血管的病理改变更严重、迅速。结论与C57BL/6T1DM模型相比, eNOS-/-T1DM模型能更全面地反映糖尿病视网膜病变的发生、发展, 为研究糖尿病及糖尿病视网膜病变提供了一个更理想的动物模型。

**Abstract:** ObjectiveTo compare the retinal function and retinal vascular pathologies in C57BL/6and eNOS-knockout (eNOS-/-) mouse models of type1diabetes mellitus (T1DM) induced by streptozotocin (STZ).MethodsT1DM models were established in 6- to 8-week-old C57BL/6 and eNOS-/-mice by intraperitoneal STZ injection. Electroretinogram (ERG) examination, fluorescein angiography (FFA), immunofluorescence staining and retinal ganglion cell counts were carried out before and after STZ injection.ResultsDiabetic C57BL/6and eNOS-/-mice showed significantly lowered a-wave and b-wave amplitude in ERG and reduced number of retinal ganglion cells (P<0.05), and the retinal vessels in diabetic eNOS-/-mice became tortuous. Compared with diabetic C57BL/6mice, diabetic eNOS-/-mice showed more severe pathological changes in retinal function and retinal vessels with also more rapid onset of pathologies.ConclusionCompared with C57BL/6mouse models, eNOS-/-mouse models of T1DM can better represent the occurrence and development of diabetic retinopathy, thus providing an ideal model for diabetes and diabetic retinopathy studies.

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