Methods Eight-week-old male ApoE^{-/-} mice were fed with western diet (was provided by academy of military medical sciences) till 44 weeks as experimental group. After fasting for (10 to 12) h, (0.56 to 0.71) mCi ¹⁸F-FDG was injected into the mice tail vein. At 30, 60, 90, 120, 150, 180 min after injection of the radiotracer, we sacrificed the mice and removed the aortas, incised longitudinally. Aortas were weighted, and radioactivity was measured with a well-type γ -counter, the results were expressed as the SUV. Macroautoradiographies were acquired, aorta plaque and macrophage were investigated by examination of stained sections by Red-O staining and CD68 staining. The control group C57BL/6N mice were fed with full diet, and the rest work was alike. We calculated the sensibility and specificity for the two groups.

Results There was a significant difference (0.243 ± 0.054 vs 0.112 ± 0.027 , $p < 0.05$) in the uptake of ¹⁸F-FDG between experimental group and control group. The en face measurements of aortas isolated after ¹⁸F-FDG injections was $5.848 \pm 2.416:1$, while the control group gave a negative result. The sensibility and specificity of experimental group at 30, 60, 90, 120, 150, 180 min were, respectively 74.07%, 62.12%, 57.09%, 57.38%, 57.14%, 55.56%, 30 min were higher than other group.

Conclusions ¹⁸F-FDG can compete with glucose for uptake into metabolically active cell like macrophage, the highest sensibility is 74.07% in 30 min. 30 min is the best time of application of nuclide on the ApoE^{-/-} mice

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INVESTIGATE THE BEST TIME OF APPLICATION OF NUCLIDE ON THE APOE^{-/-} MICE

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Objective To investigate the possibility of application of nuclide on the ApoE^{-/-} mice plaque and investigate the best time of application of nuclide on the ApoE^{-/-} mice.