After designing and operating the sequence comparison program in Python, it is shown that the SOD2 sequence in human is similar to the sequence in mouse, while the random sequence shows much lower similarity compared with both human and mouse sequence. Comparing the mouse sequence and human sequence: the ratio of difference is 0.1036 and the BLOSUM score is 1091. Comparing human sequence and random sequence: the ratio of difference is 0.9460 and the BLOSUM score is -250. Comparing mouse sequence and random sequence: the ratio of difference is 0.9640 and the BLOSUM score is -228.