mouse-human: percentage = 89.63963963963964% score = 1091

random-human: percentage = 5.405405405405405% score = -250

mouse-random: percentage = 5.8558558558558556% score = -250

The score comparing human SOD2 gene with mouse SOD2 gene is 1091 but both score comparing them with the random sequence are -250. So the mouse SOD2 gene and human SOD2 gene have greater similarity than them with the random sequence. It demonstrates that human SOD2 gene and mouse SOD2 are not random sequences and they have homology.

The percentage of identical amino acid between human SOD2 gene and mouse SOD2 gene are 89.6% while the random sequence with them are about 5.4% and 5.9%. The percentage of identical amino acid between human SOD2 gene and mouse SOD2 gene is significantly higher, which proved that human SOD2 gene and mouse SOD2 gene have close relationship. We can conclude that humans and mice have partial homology.