arthritis, cancer metastasis to bone or the like, a substance which inhibits the differentiation and maturation of osteoclasts and the activity thereof, and a therapeutic and/or preventive agent for abnormal bone metabolism.

Means for Solving the Problems

[0009]

The present inventors studied to elucidate the mechanism of osteoclast differentiation, maturation and activation in order to find a substance having a therapeutic and/or preventive effect on abnormal bone metabolism. As a result, the present inventors found that the expression of Siglec-15 gene increases with the differentiation and maturation of osteoclasts, and also found that the differentiation of osteoclasts is inhibited by an antibody which specifically binds to Siglec-15. Further, the present inventors humanized an obtained rat anti-mouse Siglec-15 antibody, and thus completed the invention.

That is, the invention includes the following inventions.

(1) An antibody which binds to a polypeptide comprising amino acid residues 39 to 165 of an amino acid sequence represented by SEQ ID NO: 2 and inhibits osteoclast formation and/or osteoclastic bone resorption, or a functional fragment of the antibody.