Alkaline phosphatase

see Placental alkaline phosphatase.

Alkaline phosphatase (ALP, ALKP, ALPase, Alk Phos) (EC 3.1.3.1) is a hydrolase enzyme responsible for removing phosphate groups from many types of molecules, including nucleotides, proteins, and alkaloids. The process of removing the phosphate group is called dephosphorylation. As the name suggests, alkaline phosphatases are most effective in an alkaline environment; it is sometimes used synonymously as basic phosphatase.

Undifferentiated pluripotent stem cells have elevated levels of alkaline phosphatase on their cell membrane.

Acromegaly had minimal effects on tested mRNAs specific for osteoblast or osteoclast function except for downregulated ALP expression. The expressions of miR known to be involved in mesenchymal stem cell commitment and downregulated TWIST1 expression indicate negative effect of acromegaly on osteoblastogenesis [1].

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Belaya Z, Grebennikova T, Melnichenko GA, Nikitin A, Solodovnikov A, Brovkina O, Grigoriev A, Rozhinskaya L, Lutsenko A, Dedov II. Effects of active acromegaly on bone mRNA and microRNA expression patterns. Eur J Endocrinol. 2018 Jan 26. pii: EJE-17-0772. doi: 10.1530/EJE-17-0772. [Epub ahead of print] PubMed PMID: 29374071.