[0014a] In one aspect, provided herein is a use of a bovine milk exosome-enriched product and vitamin K2 in the manufacture of a medicament for improving bone formation in an individual, wherein the medicament is to be administered to the individual.

[0014b] In one aspect, provided herein is a use of a bovine milk exosome-enriched product and vitamin K2 in the manufacture of a medicament for reducing a risk of bone fracture or strengthening bone in an individual, wherein the medicament is to be administered to the individual.

[0015] In one embodiment, the invention is directed to a method for improving bone formation in an individual comprising administering a bovine milk exosome-enriched product and vitamin K2 to the individual.

[0016] In another embodiment, the invention is directed to a method for reducing a risk of bone fracture or strengthening bone in an individual comprising administering a bovine milk exosome-enriched product and vitamin K2 to the individual.

[0017] In another embodiment, the invention is directed to a method for preventing or delaying onset or development of osteoporosis in an individual comprising administering a bovine milk exosome-enriched product and vitamin K2 to the individual.

[0018] The administration of a bovine milk exosome-enriched product and vitamin K2 provides a convenient means for improving bone health and development. These and additional objects and advantages of the invention will be more fully apparent in view of the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The drawings are illustrative of certain embodiments of the invention and are exemplary in nature and are not intended to limit the invention defined by the claims, wherein:

[0020] **FIG. 1A** illustrates osteoblast differentiation molecular marker Runx2 protein expression levels resulting from treatment with different effectors, as described in Example 2.

[0021] **FIG. 1B** illustrates osteoblast differentiation molecular marker LC3 protein expression levels resulting from treatment of different effectors, as described in Example 2.

[0022] **FIG. 2A** illustrates Western blots of osteoblast differentiation molecular marker Runx2 resulting from treatment with different effectors, as described in Example 2.

[0023] **FIG. 2B** illustrates Western blots of osteoblast differentiation molecular marker LC3 resulting from treatment with different effectors, as described in Example 2.