CLAIMS

1. An in vitro method for detecting the presence of neutralizing antibodies to abaloparatide in a serum sample from a human subject treated with abaloparatide, the method comprising:

preincubating the serum sample with a predetermined amount of abaloparatide for a period of at least 30 minutes;

contacting the preincubated serum sample with a population of rat epithelial cell line UMR-106 cells, wherein contacting comprises incubating the cell or cells with the serum sample for a period of time;

lysing the cell or cells to form a lysate;

measuring cyclic adenosine monophosphate (cAMP) levels in the lysate by a competitive immunoassay utilizing an electrochemiluminescent detection method; and

detecting the presence of neutralizing antibodies indicated by reduced cAMP levels relative to a negative control sample which does not include neutralizing antibodies.

2. The method of claim 1, further comprising incubation of the cell or cells with a cell permeable cAMP-specific phosphodiesterase inhibitor prior to the contacting step.

3. The method of claim 3, wherein the cAMP-specific phosphodiesterase inhibitor is 4-(3-Butoxy-4-methoxybenzyl)-2-imidazolidinone.

4. The method of claim 1, wherein the measuring of cAMP levels is performed using the Mesoscale Discovery Multi-Array 96-well cAMP Plate.

5. The method of claim 1, wherein the predetermined amount of abaloparatide is a concentration of abaloparatide in the serum sample in a range from 100 to 500 pg/mL.

6. The method of claim 1, wherein the predetermined amount of abaloparatide is a concentration in the serum sample of 600 pg/mL.

7. The method of claim 1, further comprising serum-starving the UMR-106

cell or cells for a period of time prior to the contacting step.

8. The method of claim 8, wherein the period of time ranges from 4 hours to 48 hours, 4 hours to 24 hours, 4 hours to 16 hours, 4 hours to 12 hours, or 6 hours to 12 hours.

9. The method of claim 1, wherein the serum sample is from a subject treated with abaloparatide for osteoporosis, the method further comprising monitoring the serum sample for development of potential immunogenicity.