We have developed a two-site ELISA for measurement in serum of bone-related degradation products derived from C-terminal telopeptides of type I collagen. The assay is based on the application of two highly specific monoclonal antibodies against the amino acid sequence of AHD-beta-GGR, where the aspartic acid residue (D) is beta-isomerized. In a one-step incubation procedure, the degradation products containing cross-linked diisomerized EKAHD-beta-GGR peptides are captured by a biotinylated antibody and a peroxidase-conjugated antibody. The generated complex is then bound to the streptavidin surface via the biotin conjugate. Desalted urinary antigens are used for standardization, and parallelism is observed with serum samples. Results are obtained in