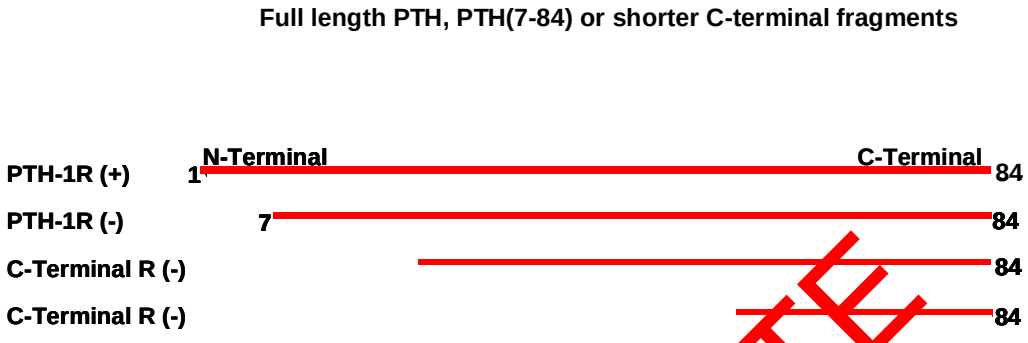
APPENDICES

Fig. 1

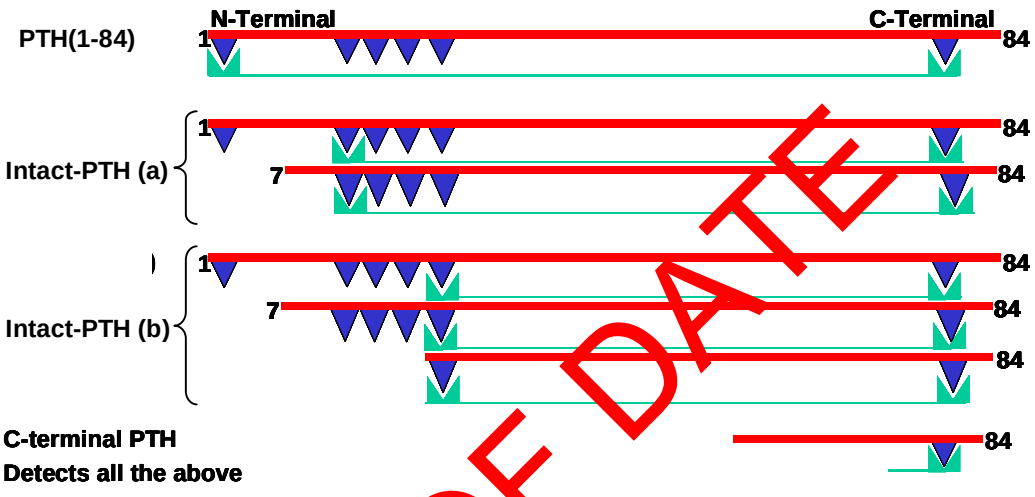
PTH receptors and their calcaemic / anti-calcaemic actions



PTH(1–84) binds to the PTH–1 receptor (PTH–1R) and is calcaemic (+). PTH(7–84) may antagonise the actions of PTH receptor agonists by downregulating the receptor and inducing receptor endocytosis, thus having an anti-calcaemic effect (-) (Sneddon et al 2004, Friedman 2004). Short C-terminal fragments (particularly those fragments shorter than 55-84) account for most of the PTH resistance seen in CKD through binding to a C-terminal receptor (C-terminal R). Activation of this receptor, expressed on osteoclast precursors and possibly on marrow stromal cells that support osteoclast formation and activity, can inhibit bone resorption, at least in part by reducing the rate of formation of new osteoclasts (Murray et al 2005).

Fig. 2

Specificity of PTH assays



PTH assays are shown as green bars with antibodies directed to PTH binding sites. Assays for PTH(1–84) bind determinants in the N-terminal 1–4 and C-terminal region. These assays detect PTH(1–84) and may detect short, C-terminally truncated fragments.

Two intact-PTH assays (a) and (b) are shown, binding full length PTH, PTH(7–84) and due to different antigenic determinants in the 15–34 region, differing amounts of shorter fragments. Assays specific for C-terminal PTH recognise determinants in the PTH 69–84 region and depending on affinity, can bind all of the above.