Reactivity of macroprolactin in common automated immunoassays.

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OBJECTIVES: To evaluate a simple assay for macroprolactin for use with the Bayer Immuno 1 analyzer, and to compare the reactivity of macroprolactin in commonly used automated prolactin assays. METHODS: Macroprolactin in serum was precipitated in a buffer containing 13.3% polyethylene glycol (PEG) 8000, redissolved, and assayed on the Bayer Immuno 1 for PRL.

Presence of macroprolactin was confirmed in some sera by FPLC using a Pharmacia Superose 12 column, followed by prolactin assay of the fractions on the Immuno 1. Sera with and without macroprolactin were then also assayed on the Abbott AxSYM, Bayer Centaur, Beckman Access, and Roche Elecsys.

RESULTS: The PEG precipitation assay is simple and reproducible (CVs < 15%), and we established a normal range of < 20% precipitation of total PRL by PEG. The assay correlates well with the amount of macroprolactin separated by FPLC as a peak with a MW of approximately 180 kDa. Macroprolactin showed the following cross-reactivities in commonly used PRL assays: Roche Elecsys > Bayer Immuno 1 > Abbott AxSYM > Bayer Centaur > Beckman Access, with the Centaur showing more variability than other assays.

CONCLUSION: Macroprolactin can be easily quantitated using the Immuno 1 PRL assay after PEG precipitation. It cross-reacts to different degrees with common prolactin assays, and is a major source of variability between them.

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