The accuracy of rapid bed-side Matrix metalloproteinase-8 (MMP-8) PTD Kit in human amniotic fluid

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Objective : The purpose of our study was to determine the accuracy of MMP-8 PTD Kit in human amniotic fluid (AF).

Methods : Qualitative MMP-8 PTD test and a specific immunoassay of MMP-8 were performed in 341 AFs. MMP-8 PTD Kit was developed to detect MMP-8 qualitatively with a cutoff >10 ng/mL. Subjects were classified into three groups according to the conditions of AFs: Group A (n=166), AF tested within 24 hours of amniocentesis Group B (n=95), AF stored at -70℃ without centrifugation: Group C (n=80), AF stored at -70℃ after centrifugation.

Results : With a threshold of 10 ng/mL in conventional ELISA, MMP-8 PTD Kit showed excellent sensitivity (97%, 85/88) and specificity (98%, 247/253) for qualitative detection of elevated AF MMP-8. Subdivided according to the status of AF storage, sensitivities and specificities of MMP-8 PTD kit were 93% and 99% for group A, 100% and 97% for group B, and 97% and 96% for group C. In 6 cases of false positive in MMP-8 PTD test, range of MMP-8 concentration by ELISA was 6.24-9.14 ng/mL and in 3 case of false negative, it was 11.1-28.5 ng/mL. There was no significant difference in sensitivity and specificity in MMP-8 PTD test for qualitative detection regardless of the storage conditions of AF.

Conclusion : MMP-8 PTD Kit can be used as a rapid and convenient tool for qualitative determination of increased AF MMP-8 with acceptable sensitivity and specificity.