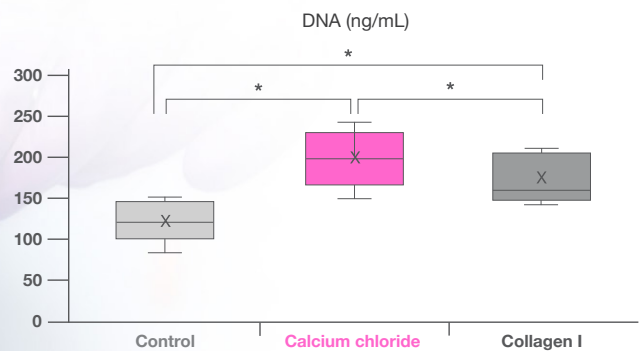
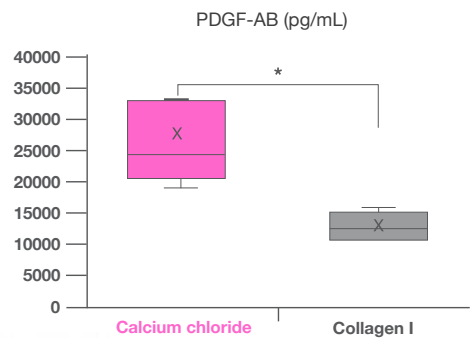
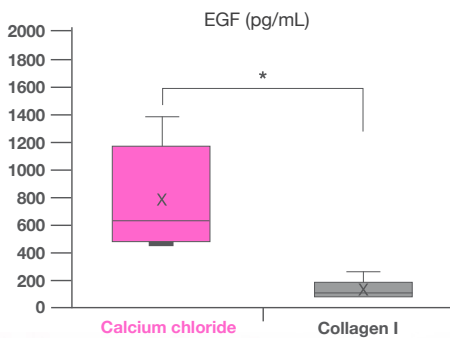


PRP ACTIVATION

PLATELET-RICH PLASMA ACTIVATION: ARE THERE DIFFERENTIAL EFFECTS IN REPRODUCTIVE MEDICINE?

CaCl₂ ACTIVATION PRODUCES MORE PLATELET GROWTH FACTORS FROM THE PLATELETS AND A GREATER BIOLOGICAL RESPONSE THAN COLLAGEN ACTIVATION



THE FULL ACTIVATION OF PRPS ALLOWS FOR THE WHOLE PLATELET CONTENT TO BE RELEASED THAT CANNOT BE ACHIEVED WITHOUT THIS STEP

ABSTRACT

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Platelet-Rich Plasma Activation: Are There Differential Effects in Reproductive Medicine?

AIM

The aim of this in vitro short report was to determine whether activation of platelet-rich plasma (PRP) results in differential effects on growth factor release and cell proliferation in reproductive medicine.

MATERIALS AND METHODS

This study involved PRP from five donors, activated with either CaCl_2 (exogenous activation) or type I collagen (mimicking endogenous activation). The release of growth factors (EGF and PDGF-AB) and the proliferative response of human ovarian fibroblasts were analysed.

RESULTS

PRP activated with CaCl_2 formed stable clots and released statistically significant higher levels of EGF (871 ± 426 pg/mL) and PDGF-AB (26535 ± 6477 pg/mL) compared to collagen-activated PRP (EGF: 141 ± 66 pg/mL, PDGF-AB: 13060 ± 2301 pg/mL). Additionally, CaCl_2 -activated PRP induced greater proliferation in ovarian fibroblasts (34.90 ± 17.82 ng/mL DNA) than collagen-activated PRP (30.75 ± 18.21 ng/mL DNA).

CONCLUSION

In conclusion, the activation of PRP with CaCl_2 results in higher growth factor release and a stronger biological response compared to type I collagen-activation. These findings underscore the importance of standardized PRP activation protocols to enhance clinical outcomes in reproductive medicine.