

Journal of Andrology, Vol 14, Issue 4 240-247, Copyright © 1993 by The American Society of Andrology

JOURNAL ARTICLE

Effects of epidermal growth factor on human sperm cell function

R. K. Naz and P. Kaplan

Department of Obstetrics and Gynecology, Albert Einstein College of Medicine, Bronx, New York 10461.

The effects of human recombinant epidermal growth factor (EGF) on the fertilizing capacity of human sperm were investigated. At lower concentrations (0.1-10 nM) EGF did not significantly ($P > 0.05$) affect human sperm penetration of zona-free hamster oocytes (SPA). At higher concentrations (25-100 nM), EGF significantly ($P = 0.01$ to < 0.001) decreased the human sperm penetration rates in SPA. At higher concentrations ($>$ or $= 25$ nM), EGF also significantly inhibited the spontaneous as well as calcium ionophore-induced acrosome reaction and release of acrosin from human sperm. There was no effect of EGF on percent sperm motility, but at higher concentrations ($>$ or $= 25$ nM) it significantly affected various sperm motility characteristics especially velocity and amplitude of lateral head displacement. EGF was detected by radioimmunoassay as well as radioreceptor assay in seminal plasma of fertile men. However, there were no statistical differences between the levels of EGF or EGF/transforming growth factor (TGF- α) in seminal plasma of fertile, infertile, and immunoinfertile men. Also, there was no significant correlation of the EGF or EGF/TGF- α levels with total sperm number, sperm motility characteristics, and penetration rates in SPA in these patients. These results indicate that EGF has either no effect or an inhibitory/negative effect on the human sperm cell capacitation and/or acrosome reaction, especially at higher concentrations (> 25 nM).

This article has been cited by other articles:



Journal of ANDROLOGY

[HOME](#)

R. K. Naz and R. Sellamuthu

Receptors in Spermatozoa: Are They Real?

J Androl, September 1, 2006; 27(5): 627 - 636.

[\[Full Text\]](#) [\[PDF\]](#)

This Article

- ▶ [Full Text \(PDF\)](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)

Services

- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)

Citing Articles

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

Google Scholar

- ▶ [Articles by Naz, R. K.](#)
- ▶ [Articles by Kaplan, P.](#)
- ▶ [Search for Related Content](#)

PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Naz, R. K.](#)
- ▶ [Articles by Kaplan, P.](#)

