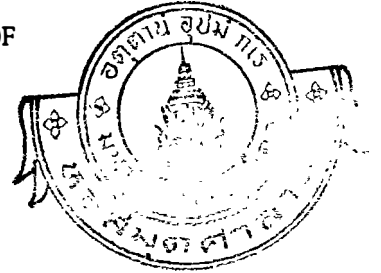


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TWO-DIMENSIONAL GEL ELECTROPHORESIS OF  
THE HUMAN SEMINAL PLASMA PROTEINS



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## ABSTRACT

The two-dimensional gel electrophoretic technique as described by O'Farrell and O'Farrell (1977) which was not capable of separating basic proteins has been modified to resolve basic proteins in human seminal plasma. This modified technique could separate proteins into more than 100 components. Analyses of human fresh seminal plasma by using this technique revealed that each of the protein bands (72 and 55 Kd) observed in one-dimensional electrophoresis consisted of many protein components of the same molecular weight but differing in isoelectric points. These proteins were mainly basic with isoelectric points in the range of pH 7.5-10.0. By using split ejaculation technique, these two major basic proteins were found to be originated from seminal vesicles and some acidic proteins (48 and 18 Kd) were from the prostate.

The protein patterns of human split ejaculate during liquefaction (0, 20 and 60 min at room temperature) were also investigated by using this technique. The acidic proteins were not degraded, representing enzyme(s) system in the prostatic fluid, while the two major basic proteins showed some degree of degradation during liquefaction.

The protein patterns during liquefaction of normal and infertile seminal plasma were compared. The results indicated that they were similar.

Sialoglycoproteins of human fresh seminal plasma were specifically radiolabelled by  $\text{NaIO}_4/\text{NaB}^3\text{H}_4$  method. At least 3 sialoglycoproteins (72,55 and 18 Kd) could consistently be demonstrated by polyacrylamide gel electrophoresis in sodium dodecyl sulfate. It was found that these 3 sialoglycoproteins from normal fresh seminal plasma were similar to those of vasectomized and azoospermic fresh seminal plasma.

