**INTERNATIONAL JOURNAL OF BIOMATHEMATICS**
*Vol. 10, No. 3 (April 2017)*

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**Research Articles**



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International Journal of Biomathema
Vol. 10, No. 3 (2017) 1750031 (17 pa

DOI: 10.1142/S1793524517500310

**Mathematical mo**
**of seminal liqui**

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This study describes the conseq
liquid through the *ductus effer*
seminal liquid as a couple stress
two-dimensional flow through a
in the form of a metachronal wa
partial differential equations wh
tions by utilizing the long wave
free flow. Exact solutions for t
stream function are obtained in
metachronism. Special attentio
tics due to the cilia motility. Th
efficient to transport a couple st
the theoretical results for the co
those reported by [T. J. Lardne
**34** (1972) 325–335]. The analyt

*Keywords*: Ciliary-induced flow
tube.

## Nomenclature

$h$: Wavy wall of cilia
$\eta$: Transverse coordinate
$p$: Pressure
$a$: Mean radius of the tube
$\lambda$: Wavelength
$\alpha$: Measure of the eccentricity
$\psi$: Stream function