New Contraceptive Technology

Background: An estimated 62% of the 61 million women of reproductive age in the USA use contraception. Popular nonpermanent hormonal methods include the pill, intrauterine devices (IUDs), and vaginal rings. Their contraceptive effectiveness is, however, associated with side effects including irregular or abnormal bleeding, spotting, dizziness, acne, headaches, breast tenderness, nausea, vomiting, and weight gain. Researchers from Washington University in St. Louis have discovered that DHEA (dehydroepiandrosterone), an endogenous hormone produced by the adrenal glands, is an alternative hormonal contraceptive that is free from these adverse side effects.

Technology Description: In preparation of the uterus for embryo implantation the endometrial stromal cells (ESCs) that predominantly make up the uterus lining differentiate to decidual cells. This key process, called decidualization, is accompanied by an upregulation of glucose utilization. Alterations in glucose metabolism may lead to abnormal or incomplete decidualization and a failure to support embryo development. Metabolism of glucose via the phosphate pentose pathway (PPP) is essential for decidualization. Research has shown that DHEA inhibits the PPP, thereby inhibiting decidualization, resulting in an inability of embryo implantation and development. This makes DHEA, as a contraceptive or as a component in a contraceptive, an attractive alternative to current hormonal methods to mitigate or eliminate their associated side effects.

Key Advantages:
- DHEA has been validated for a number of indications without adverse effects
- In vitro and in vivo experiments have proven DHEA’s contraceptive properties
- DHEA can be used alone or in combination with other known contraceptive hormones
- DHEA is amenable to various formulations (oral, vaginal rings, and IUDs)


Patents: Patent application US 20130065853 A1: Contraceptive methods and compositions

Lead Inventor: Kelle H. Moley, M.D., James P. Crane Professor, Vice Chair and director Basic Science Research in Obstetrics and Gynecology, Division of Reproductive Endocrinology; and Professor, Cell Biology and Physiology at Washington University School of Medicine in St. Louis.

Licensing Contact
David Silva, Ph.D.
dsilva@otm.wustl.edu
314-747-0923

Application Space
Contraception

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