Claims

1. Use of Eotaxin and RANTES in the manufacture of a medicament for providing an immunopermissive uterine environment in non-human mammalian females prior to implantation of an embryo or prior to insemination, wherein the medicament is to be administered to the uterus from a vaginal insert, vaginal delivery system or intra-uterine device comprising the medicament.

2. Use according to claim 1 wherein the medicament further comprises any one or more of the additional eight cytokines selected from the group comprising TNF-α, TGF-β, IL-12, MCP-1, MIP, IL-17, IL-9 and GM-CSF.

3. Use according to claim 2 wherein the IL-12 is either IL-12 p40 or IL-12p70 and wherein the MIP is either MIP-1a or MIP-1b.

4. Use according to any preceding claims wherein the medicament further includes any one or more further additional cytokines selected from the group comprising IL-1α, IL-1β, IL-1ra, IL-2ra, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL10, IL-13, IL-15, IL-16, IL-18, FGF, G-CSF, IFN-α2, IFN-γ, IP-10, PDGF, VEGF, CTACK, KC, GROα, HGF, ICAM-1, LEPTIN, LIF, MCP-3, M-CSF, MIF, MIG, β-NGF, SCF, SCGF-β, SDF-1α, TNF-β, TRAIL, VEGF and VCAM-1.

5. Use according to any preceding claim wherein active ingredients are released *in situ* either above or within the approximate physiological range as those found in seminal fluid.

6. Use according to any preceding claim wherein the vaginal insert, vaginal delivery system of intra-uterine device is a vaginal capsule, vaginal gel, vaginal tablet, vaginal powder, vaginal solution, vaginal pessary**,** vaginal cup, vaginal sponge, vaginal aerosol or vaginal foam or spray.

7. Use according to any preceding claim further including an adjuvant, excipient or carrier.

8. Use according to any preceding claim for rapid delivery, controlled delivery, continuous delivery or pulsed delivery.

9. Use according to any preceding claim for promoting uterine receptivity.

10. Use according to claim 9 for promoting uterine receptivity in a rodent, optionally wherein the rodent is a mouse or rat.

11. Use according to any one of claims 1 to 10 for reducing maternal alloreactivity in a non-human female against seminal fluid/sperm, embryos or other allograft (including existing microflora) or of improving pregnancy rate or outcome in a non-human mammalian female prior to insemination or implantation of an embryo, the use comprising:

(i) a step wherein at least one vaginal delivery vehicle comprising the medicament of any one of claims 1 to 10 is to be inserted into the vagina of the female;

(ii) optionally a step wherein further vaginal delivery vehicle(s) is to be inserted as necessary;

(iii) a step wherein a sufficient period of time is allowed to elapse to allow the active components of the vaginal delivery vehicle to be released and to penetrate into the vagina and be absorbed transmucosally and/or diffuse and/or be transported into the uterus and/or through the gastrointestinal tract mucosa; and

(iv) a step wherein the female is to be inseminated by either mating with a male or by artificial insemination, donor gametes or introducing an embryo or other allograft into the uterus for implantation.

12. Use according to claim 11 wherein steps (iii) and (iv) are performed simultaneously or in close chronological sequence.

13. Use according to either claim 11 or 12 that further includes the step of synchronizing estrus in recipient females.

14. A kit of parts comprising a number of vaginal delivery vehicles containing the medicaments of any one of claims 1 to 10 and an apparatus for inserting said vaginal delivery vehicles into the vagina of the recipient non-human mammalian female and optionally a set of written instructions therefore, the kit being for use in improving pregnancy rates and/or for reducing maternal alloreactivity against seminal fluid/sperm or embryos or other allograft tissue and/or for providing an immunopermissive uterine environment in non-human mammalian females prior to implantation of an embryo or prior to insemination.