

Immunocontraceptive - GnRH Vaccine (Improvac®)



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Commercial Name:	Improvac® Pfizer Animal Health
Contraceptive Product:	GnRH protein conjugate
Product Category:	Immunocontraception: vaccine against the GnRH
Product Availability:	Available through veterinary drug distributors.
Restrictions and/or permit required by Importing Country:	Current knowledge: widely available throughout European countries. EGZA recommends always checking with your local licensing authority
Mechanism of action:	Production of anti-GnRH antibodies by the immune system neutralising endogenous GnRH and blocking its biological activity. This results in a reduction of FSH and LH production by the anterior pituitary and, ultimately, in a reduction of ovarian follicular development and /or inhibition of testosterone secretion from the testes and spermatogenesis.
Product information	GnRH vaccine is available for the immunocastration of pigs to prevent boar taint.
Delivery Route and dose:	Subcutaneous or intramuscular injection, boosters should be given at intervals, usually either 6 months or yearly (except with elephants). This is species dependant. (see taxon sheets) EGZAC recommends always reading the manufacturer's data sheet
Females	
Latency to effectiveness:	Unknown for most species, minimum of 6 weeks.
Oestrus cycles during contraceptive treatment:	Unknown but it should be suppressed; highly successful at inducing anoestrus in domestic horses.
Managing of initial stimulation phase:	Separation of the sexes or alternative contraception method for at least 6 weeks.
Use during pregnancy:	Unknown.
Use during lactation:	Unknown.
Use in prepubertals or juveniles:	Unknown.

Use in seasonal breeders:	Unknown but if used should be done at least 6 weeks prior to the breeding season. Effective in the horse. Use on the onset of the breeding season before cycling starts.
Duration	Unknown for most of species. Improvac® generates short lived antibodies in the domestic pig (after 7-8 weeks following second injection antibodies start to decline). A full season in mares after the first booster.
Reversibility	Unknown for most of species. Short live antibodies, presumed to be fully reversible.
Effects on Behaviour	Similar to surgical castration but short-acting (duration of antibody effect). No oestrus behaviour in mares.
Effects on sexual physical characteristics	Similar to surgical castration but short-acting (duration of antibody effect).
Males	
Latency to effectiveness:	At least 2 weeks following booster.
Use in prepubertals or juveniles:	No data available.
Use in seasonal breeders:	Unknown but if used should be done at least 6 weeks prior to the breeding season. Effective in the horse. Use at the onset of the breeding season before cycling starts.
Duration and Reversibility	Unknown for most of species. Improvac® generates short lived antibodies in the domestic pig (after 7-8 weeks following second injection antibodies start to decline). Lasts about 5 to 9 months in bull elephants when used for the control of musth.
Effects on Behaviour	Similar to surgical castration but short-acting (duration of antibody effect). Decrease male aggression due to down-regulation of testosterone synthesis. Can prevent, terminate or reduce aggression/musth behaviour in bull elephants.
Effects on sexual physical characteristics	Similar to surgical castration but short-acting (duration of antibody effect).
General:	
Side effects	Occasional swelling at the vaccination site - need to inject deep intramuscular in elephants and horses. EGZAC recommends always reading the manufacturer's data sheet
Warnings	It should be handled with extreme care to avoid handler accidents. EGZAC recommends always reading the manufacturer's data sheet
Reporting Requirements: In order to increase our knowledge of the efficacy of contraception methods it is recommended that all individuals on contraception be reported to EGZAC	

References:

1) Immunocontrol of reproductive rate and aggression in African elephants. HJ Bertschinger, A Delsink, JF Kirkpatrick, JJ van Altena, H DeNys, M Bates (2009) Proceedings for the BVZS 2009 Autumn Meeting, York UK.

2) <http://www.improvac.com>

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Disclaimer: EGZAC endeavours to provide correct and current information on contraception from various sources. As these are prescription only medicines it is the responsibility of the veterinarian to determine the dosage and best treatment for an individual animal under their care. EGZAC can therefore not be held liable for any injury, damage or contraception failure in an animal. EGZAC recommends that individuals managed within breeding programmes should not be contracepted without the agreement of the programme coordinator.