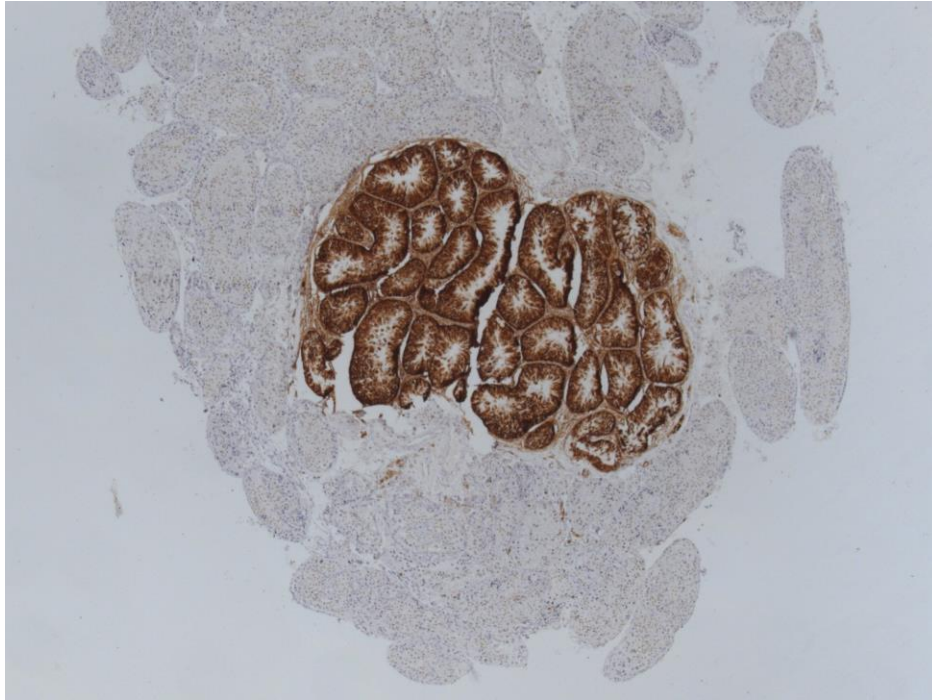


Testisweefseltransplantatie

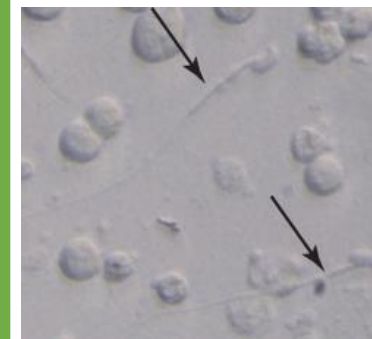
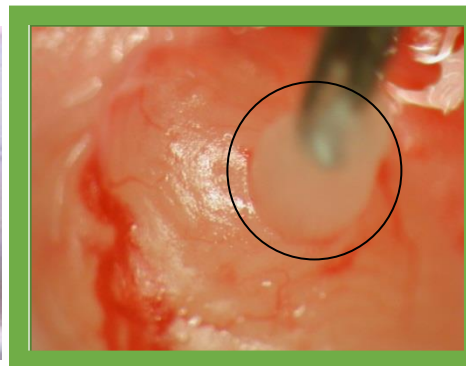


Prof Dr Ellen Goossens

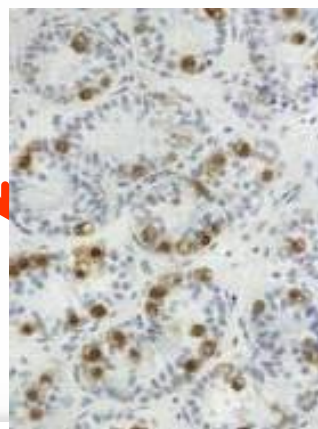


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Fertiliteitspreservatie



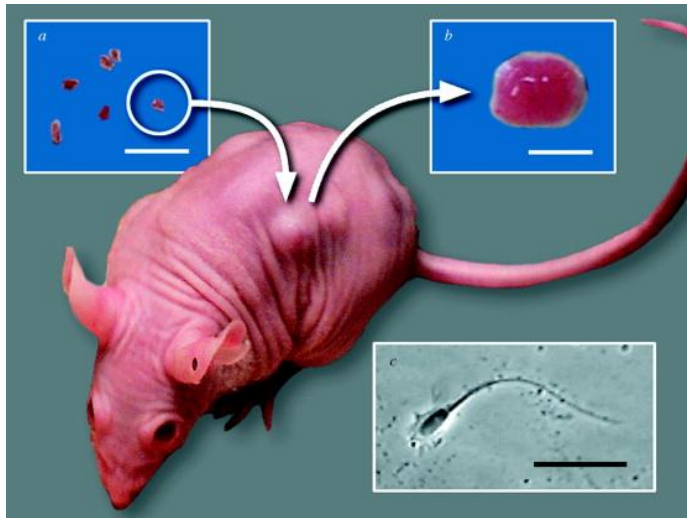
Risico op verlies van
SSC > 80%



Na genezing en
bij kinderwens

Historiek

- Ectopische weefseltransplantatie
 - Muis-naar-muis (Honaramooz et al., 2002; Schlatt et al., 2003)



Historiek

- Ectopische weefseltransplantatie

- Xeno-transplantatie

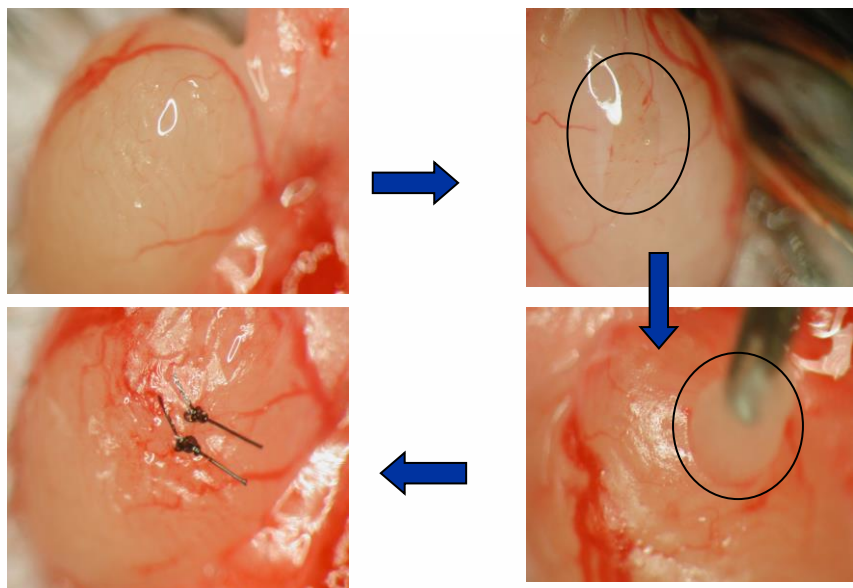
- Hamster (Schlatt et al., 2002)
 - Kat (Snedaker et al., 2004)
 - Hond (Abrishami et al., 2010)
 - Schaap (Arregui et al., 2008)
 - Geit (Honaramooz et al., 2002)
 - Varken (Honaramooz et al., 2002)
 - Rund (Rathi et al., 2005)
 - Paard (Rathi et al., 2006)
 - Rhesusaapje (Honaramooz et al., 2004)
 - Marmoset (Schlatt et al., 2002)
 - Mens (Goossens et al., 2008)

Complete spermatogenese

Spermatocyten (arrest in meiose)
Spermatogonia

Historiek

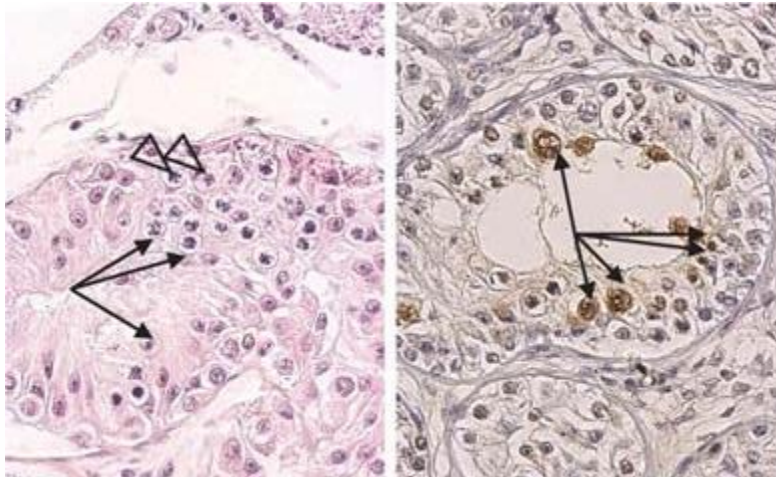
- Homotopische weefseltransplantatie
 - Muis-naar-muis (Van Saen et al., 2009)



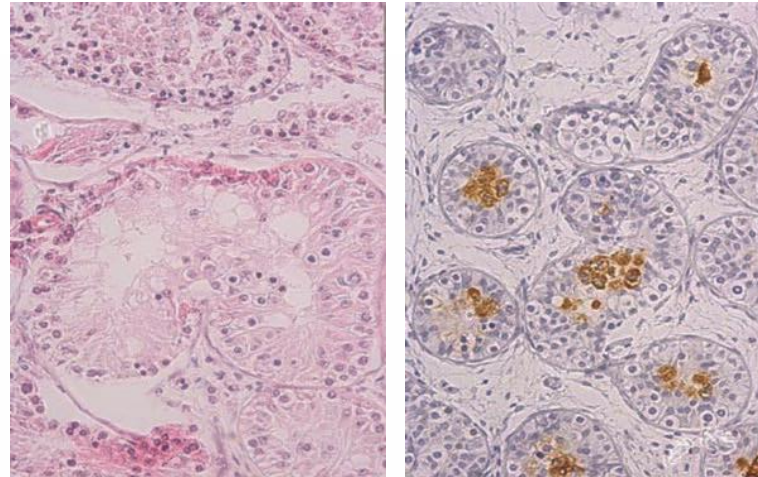
	grafts met donor spermatogenese (%)	Totale kolonie lengte/testis (mm)
Homotopische weefselgraft		
Ingevroren- ontdood weefsel		

Historiek

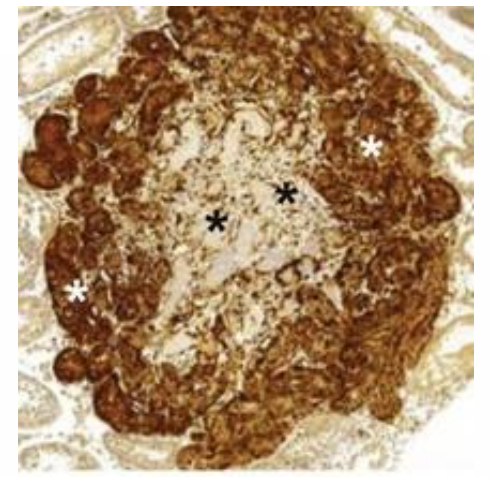
- Homotopische weefseltransplantatie
 - Mens-naar-muis (Van Saen et al., 2013)



Spermatocyten na 9m



+ hrFSH
Spermatocyten na 12m



Necrose vanaf d4

Doel 1

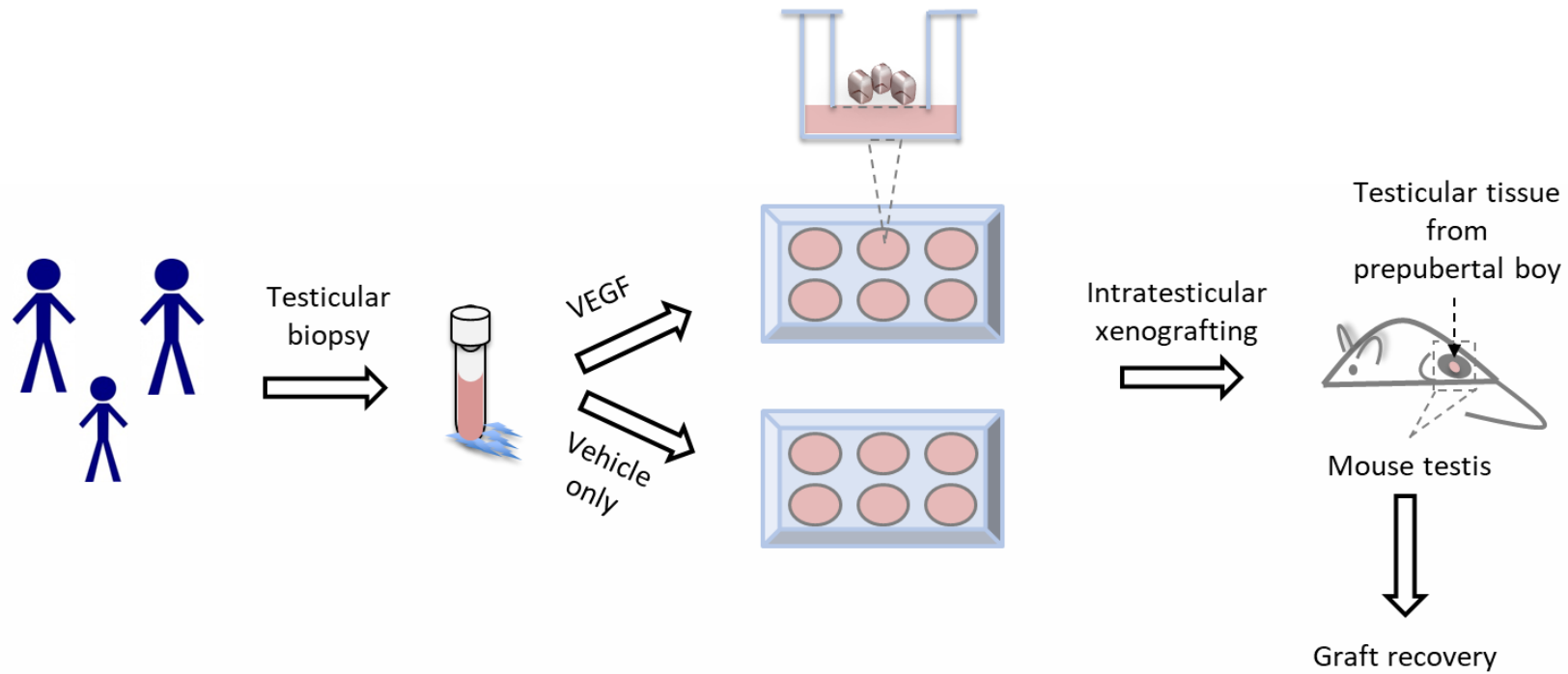
- Kan VEGF de efficiëntie van xenotransplantatie verbeteren?

Ntemou E, Kadam P, Van Saen D, Vicini E and Goossens E

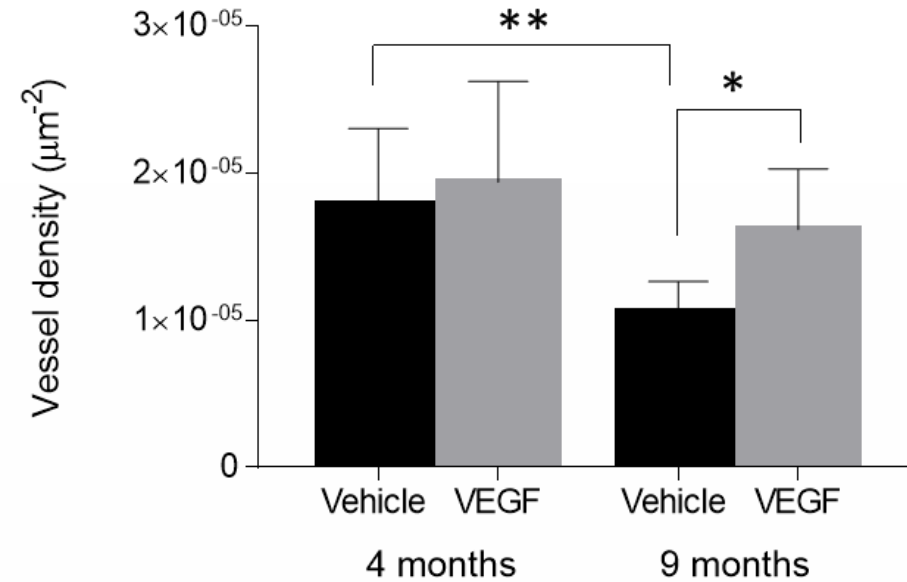
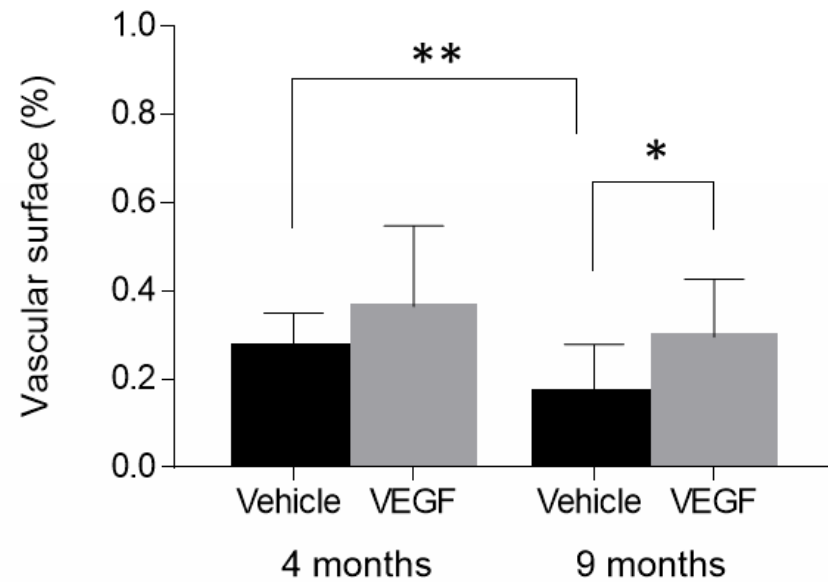
Positive long-term effect of human recombinant vascular endothelial growth factor (VEGF-165) on testicular tissue xenografts from prepubertal boys

Reproductive BioMedicine Online (resubmitted after minor revision)

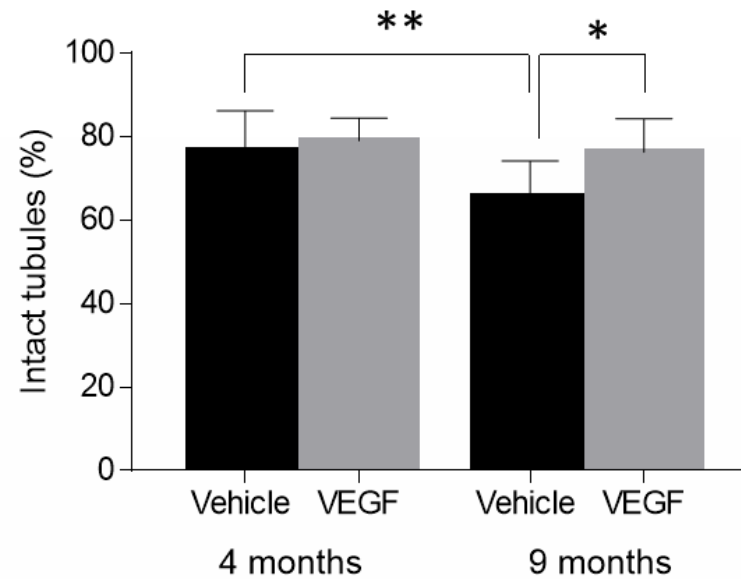
Experimenteel design



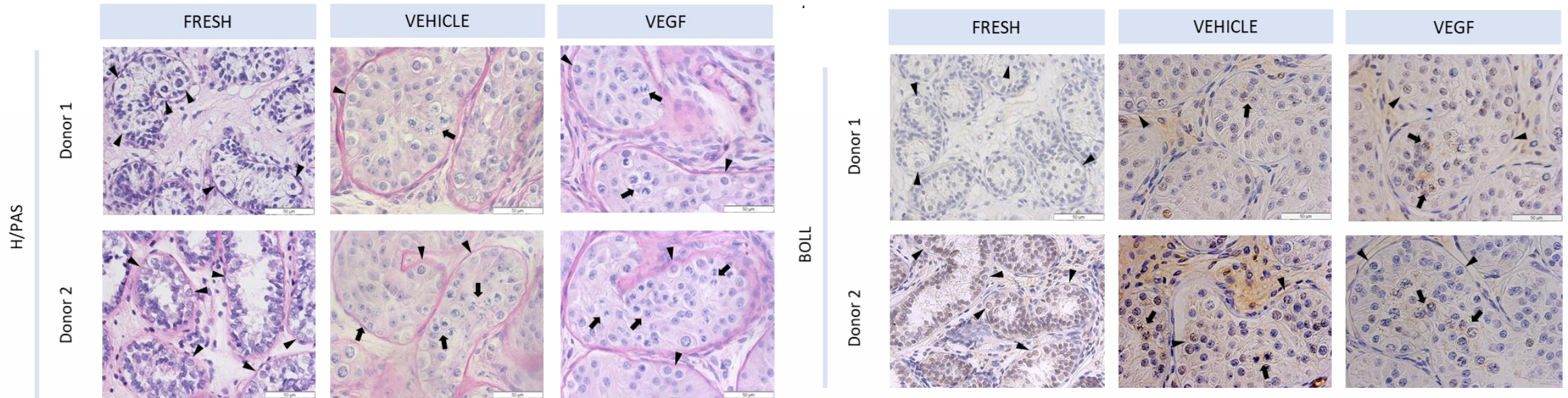
Effect op vascularisatie



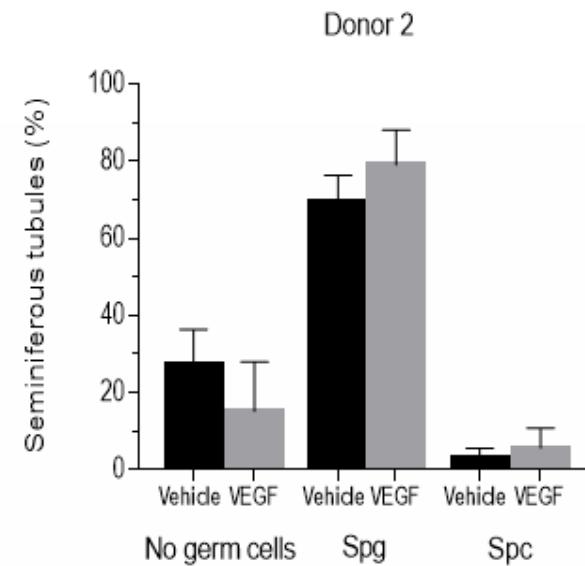
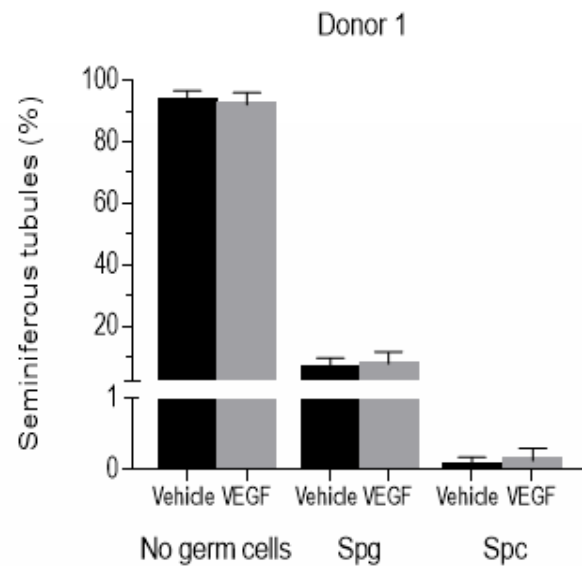
Effect op integriteit tubuli



Effect op kiemcelldifferentiatie



Effect op kiemceldifferentiatie



Besluit

Mens-naar-muis

VEGF

- verbetert vascularisatie
- verbetert integriteit van de tubuli
- heeft geen invloed op kiemceldifferentiatie

Meest mature stadium: secundaire spermatocyten

→ Meer tijd nodig?

→ Phylogenetische afstand te groot?

Doel 2

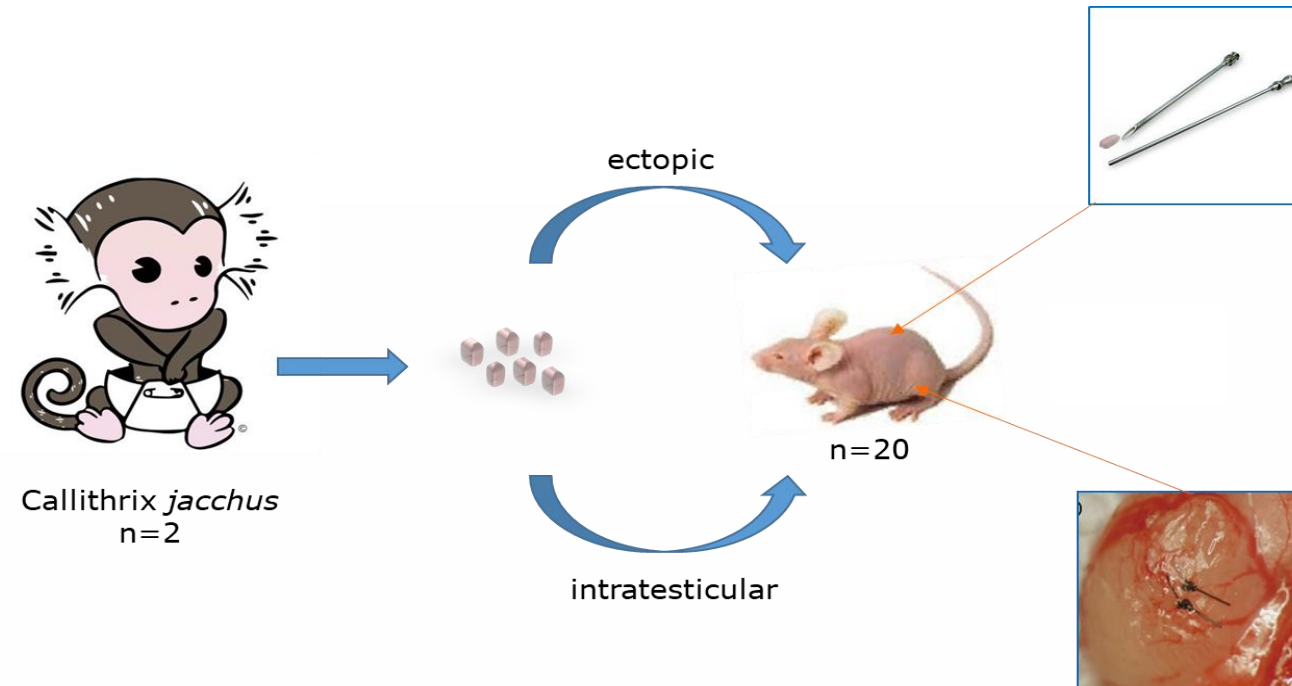
- Kan volledige spermatogenese bekomen worden na xenotransplantatie van niet-menselijke primaten testis?

Ntemou E, Kadam P, Van Saen D, Wistuba J, Michell R, Schlatt S and Goossens E

Complete spermatogenesis in testis xenotransplants from immature non-human primate

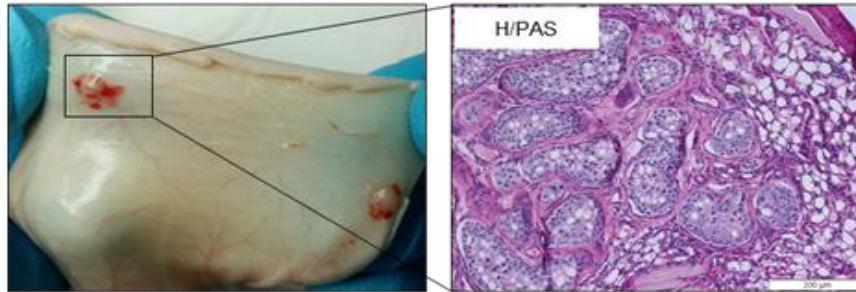
Human Reproduction (in press)

Experimenteel design

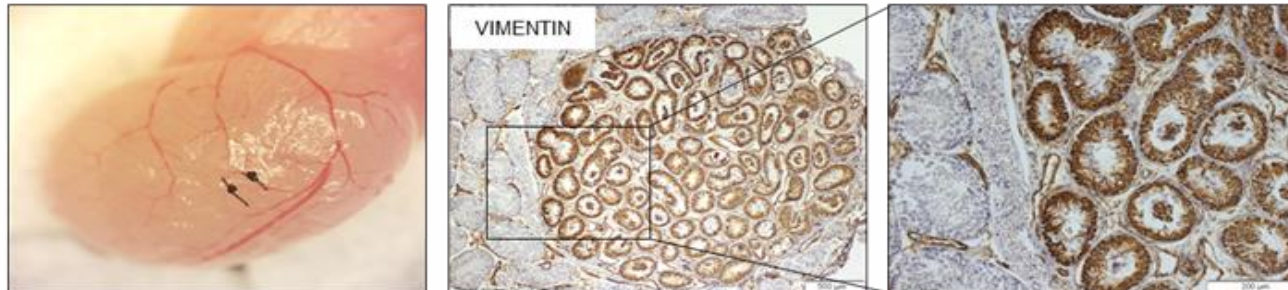


Recuperatie grafts

A Recovery of ectopic transplants



B Recovery of intratesticular transplants

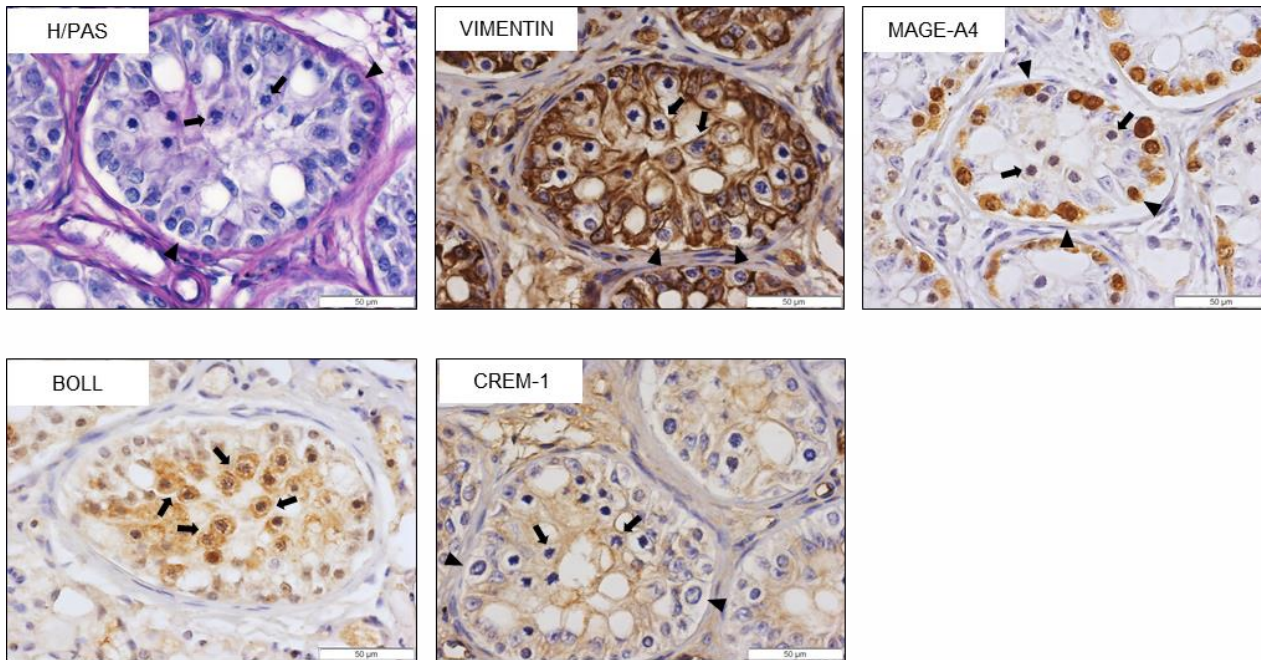


Recuperatie grafts

	No. (%) of Recovered Transplants	No. (%) of Degenerated Transplants	No. (%) of Non-recovered Transplants	<i>P</i> value
4 Months Post-Transplantation^a				
Ectopic				
Marmoset A	2/24 (8)	9/24 (38)	13/24 (54)	
Marmoset B	8/24 (33)	3/24 (13)	13/24 (54)	
Total	10/48 (21)	12/48 (25)	26/48 (54)	.058
Intratesticular				
Marmoset A	4/9 (44)	1/9 (11)	4/9 (44)	
Marmoset B	5/9 (56)	1/9 (11)	3/9 (33)	
Total	9/18 (50)	2/18 (11)	7/18 (39)	
9 Months Post-Transplantation^a				
Ectopic				
Marmoset A	0/25	5/25 (20)	20/25 (80)	
Marmoset B	0/24	5/24 (21)	19/24 (79)	
Total	0/49	10/49 (20)	39/49 (80)	< .001
Intratesticular				
Marmoset A	4/9 (44)	3/9 (33)	2/9 (22)	
Marmoset B	5/9 (56)	4/9 (44)	0/9	
Total	9/18 (50)	7/18 (39)	2/18 (11)	

Ectopische grafts

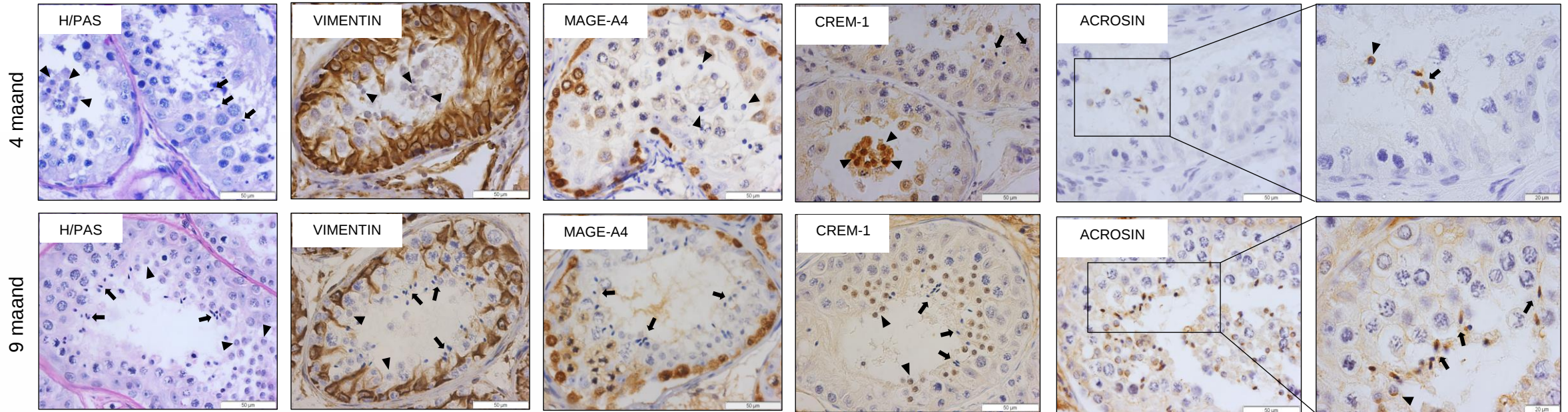
4 MAAND NA TRANSPLANTATIE



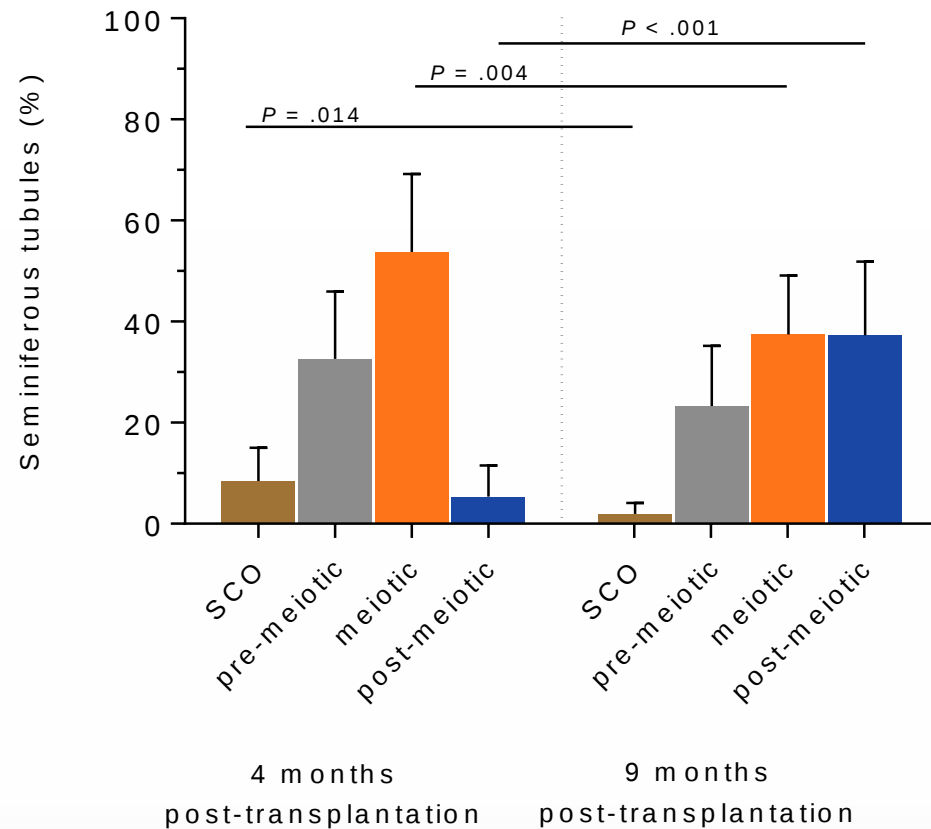
9 MAAND NA TRANSPLANTATIE

X

Intratesticulaire grafts



Intratesticulaire grafts



Besluit

Primaat-naar-muis

Intratesticulaire weefseltransplantatie > subcutane weefseltransplantatie

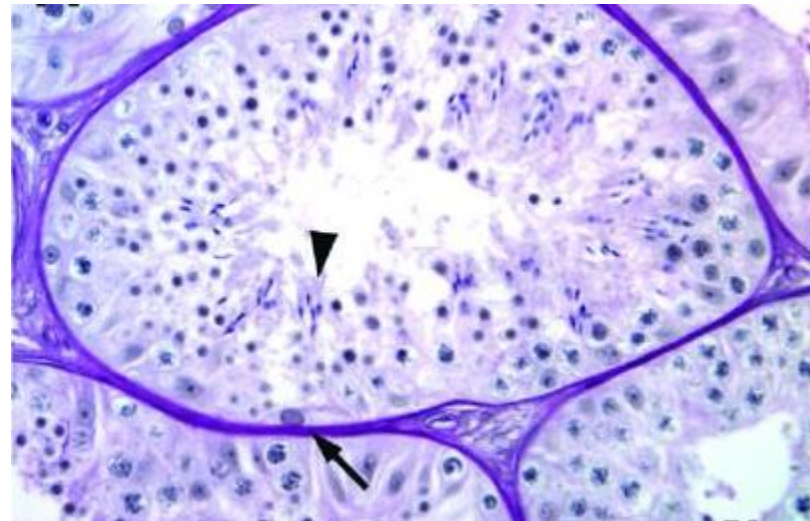
Volledige spermatogenese al na 4 maand

Spermatogenese houdt minstens 9 maand aan

- Phylogenetische afstand niet te groot
- Mens-naar-muis transplantatie heeft meer tijd nodig
- Mens-naar-mens: autoloog, voldoende tijd in acht nemen

Historiek

- Autologe weefseltransplantatie is efficiënt bij niet-menselijke primaten
 - Ectopisch
 - Volledige spermatogenese (Jahnukainen et al., 2012)





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