ELLEGAARD
GÖTTINGEN MINIPIGS

VAB and VAP implants in Göttingen Minipigs

Superficial vessels in the minipig are few and frequently accessing them for infusion and serial blood sampling can be a challenge. Although Göttingen Minipigs have a convenient size for handling, restraint and venepuncture can be stressful and affect blood parameters. Therefore catheterization is often the best option for blood sampling.

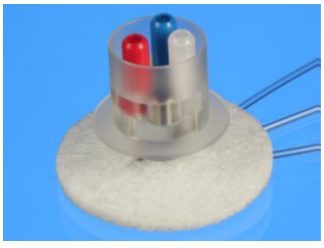
Implantation of Seldinger catheters and Vascular Access Ports (VAP) are well described, but use of Vascular Access Buttons (VAB) is relatively new and offers other options when designing a study where frequent vascular access is required.

Did you know...

At Ellegaard Göttingen Minipigs we can implant VABs and VAPs in our modern surgery suite and deliver the minipigs pre-implanted and ready to use to your facility.

Vascular Access Button (VAB)

VABs were originally designed for rats, but Ellegaard Göttingen Minipigs has pioneered their usage in pigs. The device allows for needleless vascular access, and sampling or infusion are therefore painless. Even though it is small, it has up to four ports to which 3fr catheters can be connected.

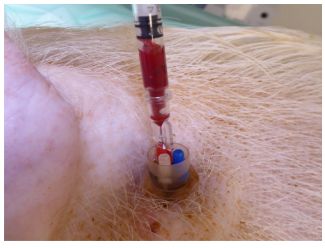


Pictures 1 and 2
VABs have a felt disc that is placed under the skin. The subcutaneous tissue grows into the felt and seals the implantation site. The upper part is above the skin and a cap protects the ports.

Picture 3
Göttingen Minipig with a VAB implanted behind the ear.

Our standard model has the button placed behind the ear, two catheters in the external jugular vein, and the length of the catheters is slightly offset. If only sampling is required for the study, the second catheter acts as a backup in case of blockage. For infusion or IV dosing studies, the longer catheter is used for dosing and the shorter for sampling. Most implantations are performed in minipigs between 8 and 13 kg, but can potentially be done in all sizes.

As with all catheter systems, the VAB's patency has a time limit. However, careful maintenance helps prolong the useful period. This model has a patency of typically 6 weeks, but in many cases remain useful a lot longer.



Pictures 4 and 5
Close up of the implanted VAB (left) and sampling (right).

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Vascular Access Port (VAP)

VAPs have been used for many years in various species, including humans, and have been widely used in minipigs. The VAP is placed subcutaneously behind the ear and a 6fr catheter is placed in the external jugular vein. The VAP can be used for both dosing/infusion or blood sampling, but it is not recommended to do dosing and sampling trough the same system, as there is only one catheter. Most often VAPs are implanted in minipigs weighing 15 kg or more.

Unlike the VAB, it is necessary to penetrate the skin with a specially designed (Huber) needle for sampling or dosing. This can be painful and can lead to skin reactions and necrosis around the port. However, VAPs have no external parts which makes it easy to group house the minipigs. This model typically has a patency of several months, and in some cases even up to a year.

Picture 6
VAP with attached 6fr catheter.

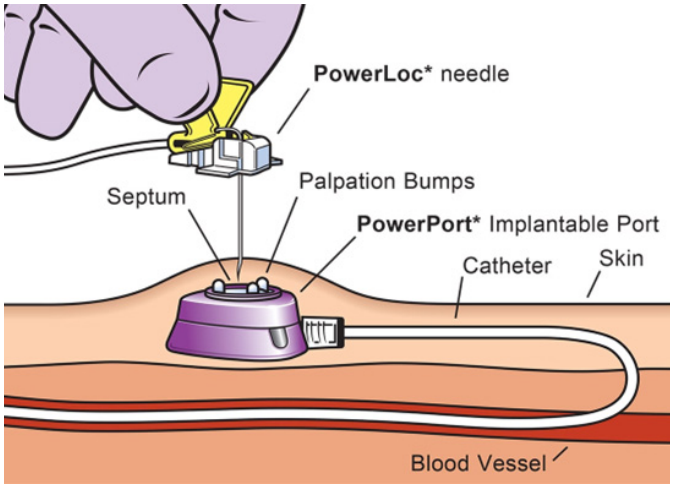
Choosing VABs or VAPs

Vascular Access Buttons

- Painless vascular access minimizing stress and reducing biased readings
- Patency of typically 6 weeks
- Group housing possible but not recommended

Vascular Access Ports

- Totally enclosed system beneath the skin requiring skin penetration for vascular access
- Patency of typically several months
- Group housing possible



Picture 7
Vascular Access Port system.

There are other options for placing buttons and catheters than described here, and we are happy to discuss your needs. If you think a pre-implanted device will simplify and improve welfare in your next study, please contact us to discuss the possibilities of tailoring a system that is right for your study.

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