


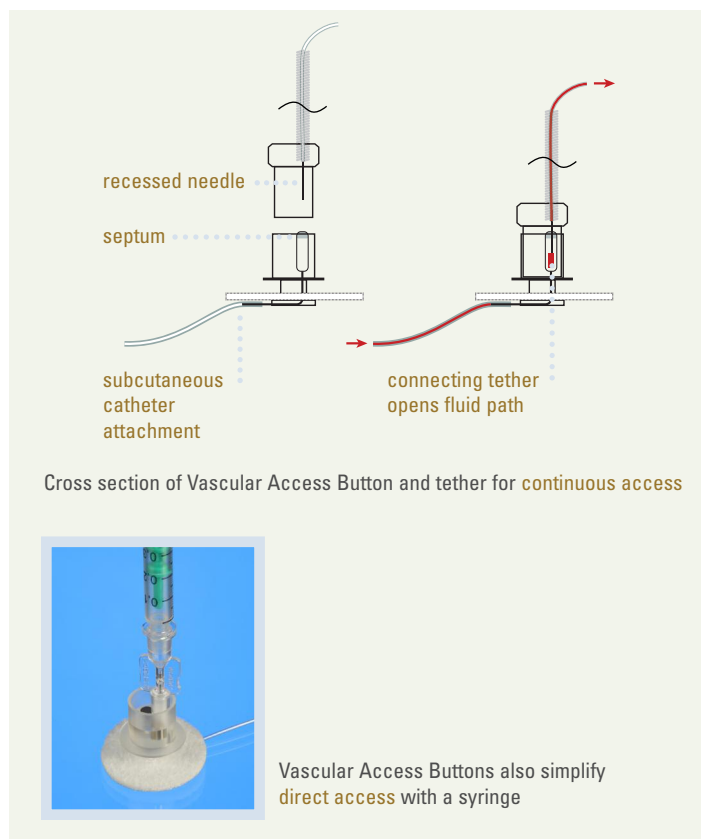
# BUTTONS, HARNESESSES & TETHERS

Instech's revolutionary Vascular Access Buttons and Harnesses are built around miniature externalized ports that simply and cleanly connect an implanted catheter to a syringe for direct access or to a tether for continuous access.




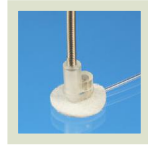






Buttons are implanted subcutaneously during catheterization surgery and can offer great long-term patency and the option of group housing. Harnesses can be installed after surgery but must be checked frequently so that they do not become too tight or loose.

Buttons and harnesses have been used with equal success with rats; however, buttons generally perform better than harnesses with mice.

BENEFITS 	Button	Harness
Built-in port permits aseptic technique	•	•
Simple connection reduces handling	•	•
Minimal backflow for improved patency	•	•
Catheter not externalized	•	•
No adjustment required as animal grows	•	•
Group housing possible when not tethered	•	•
May be installed after surgery	•	•
May be installed by animal vendor*	•	•



## THE VASCULAR ACCESS BUTTON AND HARNESS™ FAMILY

CHANNELS	APPLICATIONS	RATS 	MICE 
1	Infusion Blood sampling		
2	Infusion and blood sampling Bile sampling Infusion into two vessels		
3	Blood and bile sampling Infusion and bile sampling Blood sampling and infusion into two vessels		
4	Blood and bile sampling and infusion Bile sampling and infusion into two vessels		

\* For a list of surgical service vendors and their experience levels see [www.instechlabs.com/downloads/InstechSurgSvcVendors.pdf](http://www.instechlabs.com/downloads/InstechSurgSvcVendors.pdf)

# RAT BUTTONS

## Vascular Access Button™, Rat, 1 Channel NEW

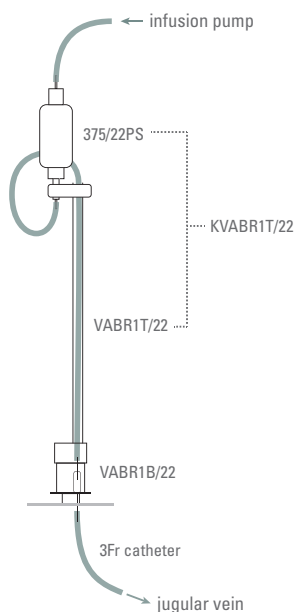


This implantable button features an external port with a septum for quick, aseptic connection and disconnection of a catheterized rat and a one-channel tether for infusion or blood sampling, or intermittent access with a syringe fitted with a PinPort injector or PinPort connector and extension set.

This new version features the smaller PinPorts for compatibility with the magnetic tethers and caps and PNP3M injectors used with the 2-channel rat buttons. The mating tether snaps into the button with magnets to minimize the force on the animal.

💰 [www.instechlabs.com/Infusion/tethers/singlevab.php](http://www.instechlabs.com/Infusion/tethers/singlevab.php)

Example application:  
continuous infusion



### Variant NEW



27ga connector for intrathecal catheters

## SPECIFICATIONS

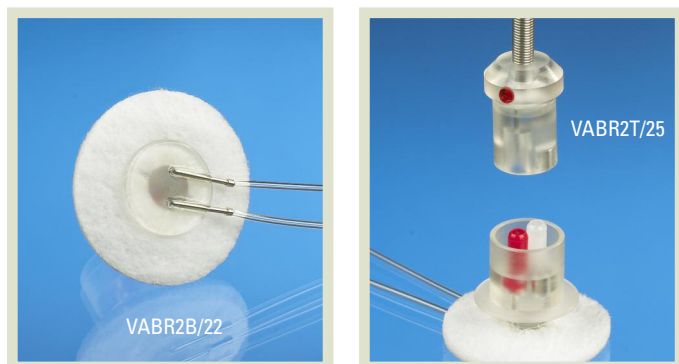
Port dead volume	3µL
Materials in fluid path	acetal, silicone, stainless steel (button) polyurethane, stainless steel (tether) polycarbonate, stainless steel (injector)
Felt material	surgical grade polyester
Felt diameter	1in (2.5cm)
Catheter compatibility	22ga: 3Fr PU with ID of .60-.64mm 27ga: Instech intrathecal rat catheters
Tether tubing	/22: 025x055 PU, 2.9µL/cm (VAHBPU-T22) /25: 017x037 PU, 1.5µL/cm (VAHBPU-T25)
Button weight	2g



The original VAB design, with the larger port and blue twist-in tether connection, remains available.

[www.instechlabs.com/Infusion/tethers/vab.php](http://www.instechlabs.com/Infusion/tethers/vab.php)

## Vascular Access Button™, Rat, 2 Channel

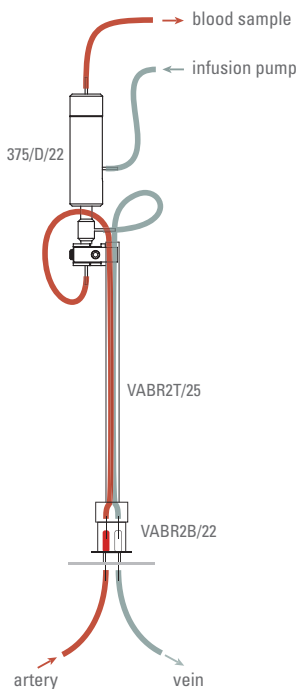


This implantable button connects 2 independent fluid channels simply by engaging the mating tether. It is the same size as the one-channel rat Vascular Access Button. Connect two 3Fr catheters to the 22ga inputs under the felt disk. The small ports, one red and one white, can be accessed manually using a syringe fitted with a PinPort injector.

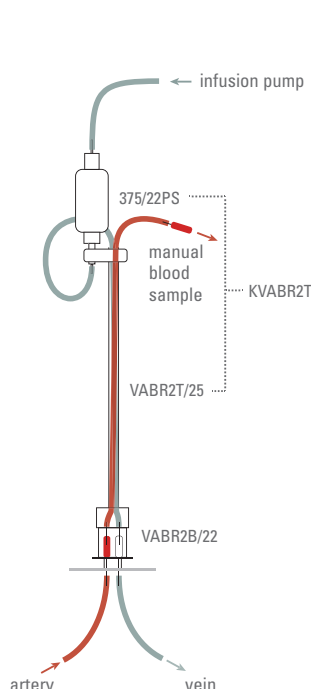
The mating tether snaps into the button with magnets to minimize the force on the animal. The magnets are oriented so that tethers can only be connected one way. Tethers, injectors and protective caps for the 1 and 2 channel buttons are compatible to add flexibility. For example, attach a 1 channel tether for continuous access to one port, leaving the other for intermittent sampling or bolus injections.

🌐 [www.instechlabs.com/Infusion/tethers/dualvab.php](http://www.instechlabs.com/Infusion/tethers/dualvab.php)

Example application:  
continuous infusion  
and blood sampling



Example application:  
continuous infusion  
intermittent blood sampling



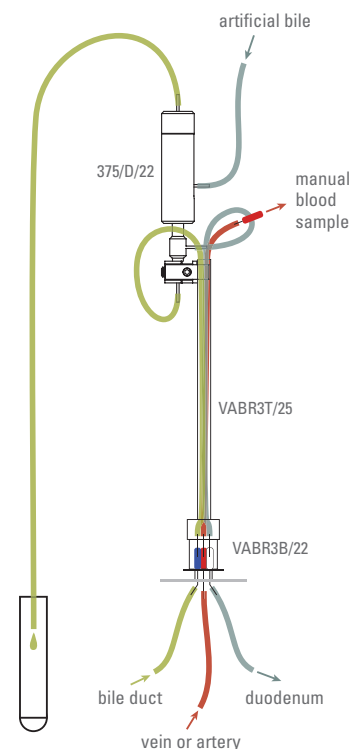
## VAB™, Rat, 3 Channel NEW



The 3 channel button is frequently used for bile collection, which uses the blue and white ports with bile flowing through an extracorporeal loop prior to sampling, plus either blood sampling or infusion. Many other configurations are possible.

🌐 [www.instechlabs.com/Infusion/tethers/triplevab.php](http://www.instechlabs.com/Infusion/tethers/triplevab.php)

Example application:  
bile collection, bile  
salt replacement and  
blood sampling



## VAB™, Rat, 4 Channel NEW












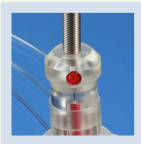








For applications such as simultaneous bile collection, blood sampling and infusion.

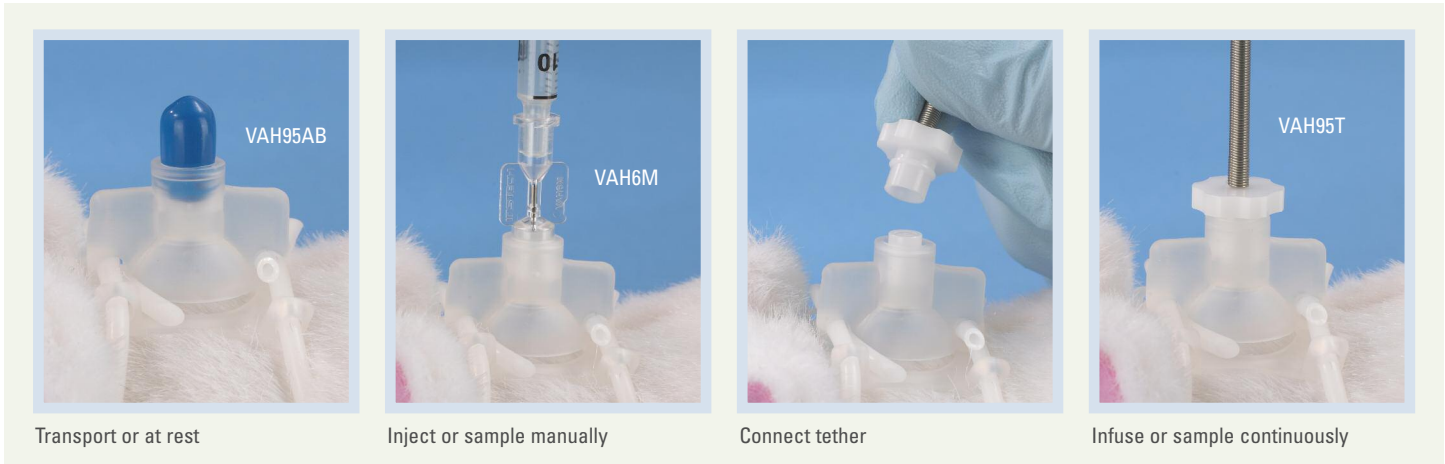
[www.instechlabs.com/Infusion/tethers/quadvab.php](http://www.instechlabs.com/Infusion/tethers/quadvab.php)

# RAT BUTTONS

## RAT VAB™ ORDERING INFORMATION

CHANNELS	1	2	3
BUTTON	 VABR1B/22: 1ch, 22ga VABR1B/27: 1ch, 27ga	 VABR2B/22: 2ch, 22ga	 VABR3B/22: 3ch, 22ga
INJECTOR	 PNP3M: 250pcs PNP3M-50: 50pcs	 PNP3M: 250pcs PNP3M-50: 50pcs	 PNP3M: 250pcs PNP3M-50: 50pcs
PROTECTIVE CAP FOR GROUP HOUSING	 VABRC	 VABRC	 VABRC
TETHERS other options are available	 VABR1T/22: 1ch, 025in ID tubing	 VABR2T/25: 2ch, 017in ID tubing	 VABR3T/25: 3ch, 017in ID tubing
	 VABR1T/25: 1ch, 017in ID tubing	 VABR1T/22: 1ch, white port	
		 VABR1TR/22: 1ch, red port	
		 VABR1THR/25: 1ch, red port	
BILE LOOPS	n/a	 VABR2L: white to red	 VABR3L: white to blue

## Vascular Access Harness™, Rat, 1 Channel



Instech's VAH system consists of a small external port housed in a harness which can be installed at the same time that the catheter is implanted. For best results use Instech 3Fr polyurethane catheters. Attach the catheter to a 22ga connector on the port in the harness dome and then fill the port and catheter with lock solution to maintain patency prior to use.



Access the harness manually to sample, dose or check patency using a syringe with a VAH6M injector.

To begin a continuous infusion or blood sampling study simply plug a mating VAH tether into the harness. A recessed needle built into the tether makes the fluid connection through the port. The VAH is a closed system: tether connection does not introduce contamination or air.

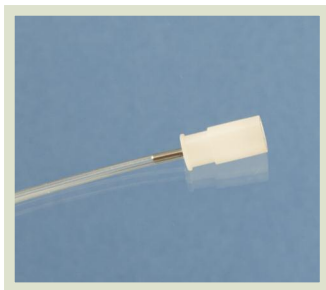
Harness bands should be checked regularly for appropriate fit. Rats cannot be group housed with harnesses.

💰 [www.instechlabs.com/Infusion/tethers/vah.php](http://www.instechlabs.com/Infusion/tethers/vah.php)

### Accessories



SIP22P tether plug to keep tether connector clean and sealed between studies



SIP22/4 replacement port

### Variants



VAH95ABH harness with hole for connection to Culex® tethers



VAH95AB-1P harness with side port for intermittent access

## SPECIFICATIONS

Port dead volume	8µL
Septum durability	~200 sticks
Saddle size	1.13x1.13in (2.9cm)
Body surface contact area	.82in <sup>2</sup> (5.3cm <sup>2</sup> )
Standard belly band length <sup>a</sup>	9in (23cm)
Spring type	PS95 (1ch), PS115 (2ch)
Spring length <sup>b</sup>	12in (30cm)
Compatible plastic swivels	375/22PS (1ch only)
Compatible stainless swivels	375/22, 375/D/22
Standard tether tubing	VAHBPU-T22, -T22W (2ch)
Catheter connector	22ga
Compatible catheter	3Fr (.60-.64mm ID) polyurethane
Materials in fluid path <sup>c</sup>	PU, acetal, stainless steel, silicone
Weight of harness	5.0g (1ch) , 6.0g (2ch)

<sup>a</sup> Versions with extra long belly bands (14in / 36cm) are available for large rats or guinea pigs.

<sup>b</sup> Custom length tethers are available on request. See p38 for spring specifications.



# RAT HARNESSES

## Vascular Access Harness™, Rat, 2 Channel



The two channel VAH connects two independent channels as simply as the standard VAH connects one. Install the VAHD115AB harness when the catheters are implanted. Access the ports directly using a syringe with a VAH6M injector for manual flushing, injections or sampling.

Applications include bile collection, simultaneous infusion and blood sampling, blood pressure measurement and blood sampling and, with the -1P and -2P models with additional side ports, all of the above at once.

🌐 [www.instechlabs.com/Infusion/tethers/dualvah.php](http://www.instechlabs.com/Infusion/tethers/dualvah.php)



One continuous line, one line with port for intermittent access










Two continuous lines

### Variants



VAHD115AB-2P 2 side ports.  
Also available with one port.

## RAT VAH™ ORDERING INFORMATION

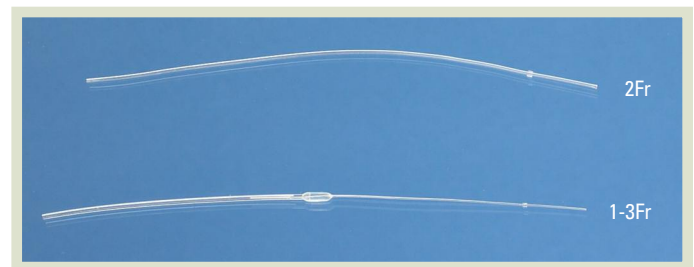
CHANNELS	1	2
HARNESS	 VAH95AB: 1ch, 22ga	 VAHD115AB: 2ch, 22ga
INJECTOR	 VAH6M: 250pcs VAH6M-50: 50pcs	 VAH6M: 250pcs VAH6M-50: 50pcs
PROTECTIVE CAP not for group housing	 VAH95CAP included	 VAHD115CAP optional
TETHERS	 VAH95T	 VAHD115T
BILE LOOP	n/a	 VAHD115L

## Vascular Access Button™, Mouse, 1 Channel NEW



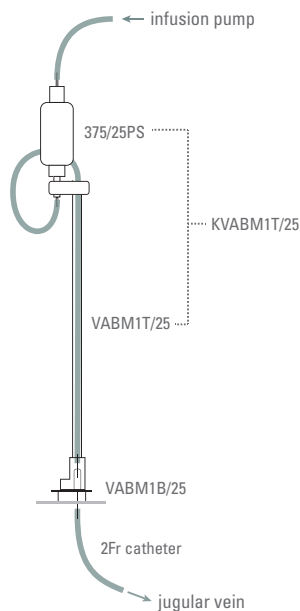
Insteck's mouse VAB™ permits quick, aseptic connection and disconnection of a catheterized mouse and an infusion tether. This updated design features magnets for improved ease of use and animal welfare. Access the port built into the button directly using a syringe fitted with a mating PinPort or VAHLS25/30 injector. Use the VABMG tool to hold the button and mouse magnetically without hemostats. Connect a tether (VABM1T/25) with a 25ga swivel for continuous access; the tether connects magnetically to minimize force on the animal. Use the red aluminum VABM1C cap to protect the button stalk when group housing mice.

🌐 [www.instecklabs.com/Infusion/tethers/singlemousevab.php](http://www.instecklabs.com/Infusion/tethers/singlemousevab.php)



Connect straight 2Fr catheters such as C20PU-MJV1617 to 25ga buttons; connect 1-to-3Fr catheters such as C10PU-MFV1301 to 22ga buttons. (See p23 for mouse catheters.)

Example application:  
continuous infusion



## SPECIFICATIONS

Port dead volume	3µL
Materials in fluid path	acetal, silicone, stainless steel (button) polyurethane, stainless steel (tether) polycarbonate, stainless steel (injector)
Felt material	surgical grade polyester
Felt diameter	.56in (14mm)
Catheter compatibility	22ga: 3Fr PU with ID of .60-.64mm 25ga: 2Fr PU with ID of .41-.43mm
Tether tubing	017x037 PU, 1.5µL/cm (VAHBPU-T25)
Button weight	0.5g

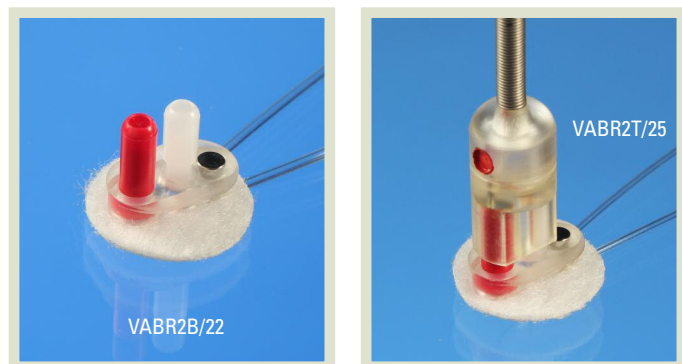


The original mouse VAB design, with an o-ring based connection instead of magnets, remains available.

[www.instecklabs.com/Infusion/tethers/mousevab.php](http://www.instecklabs.com/Infusion/tethers/mousevab.php)

# MOUSE BUTTONS

## Vascular Access Button™, Mouse, 2 Ch. NEW

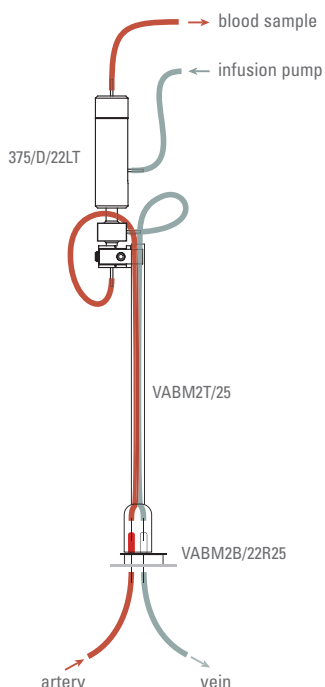


This new implantable button for mice connects 2 independent fluid channels simply by engaging the mating tether. It is designed for glucose clamping and other applications where simultaneous blood sampling and infusion is required. The small ports, one red and one white, can be accessed manually using a syringe fitted with a PNP3M injector.

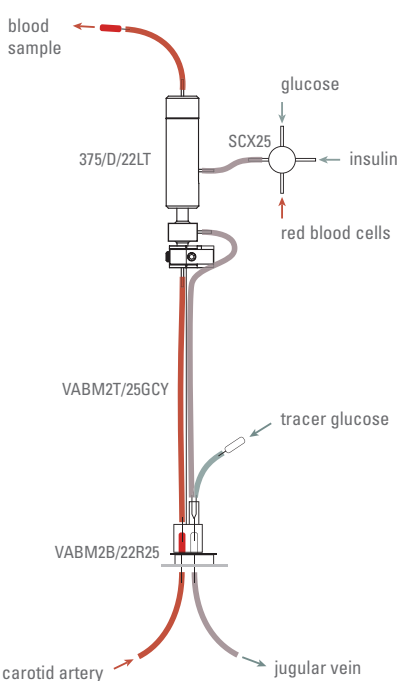
The VABM2T/25 tether uses PS80 spring, which can be connected to a 22ga low-torque dual channel swivel. Alternatively, you can connect one line to a single channel swivel for continuous access and then allow the second line to rotate freely with a PinPort for intermittent dosing or sampling, or connect a single-channel VABM1T/25 tether to the white port, leaving the red port closed.

③ [www.instechlabs.com/Infusion/tethers/dualmousevab.php](http://www.instechlabs.com/Infusion/tethers/dualmousevab.php)

Example application:  
continuous infusion  
and blood sampling



Example application:  
glucose clamp

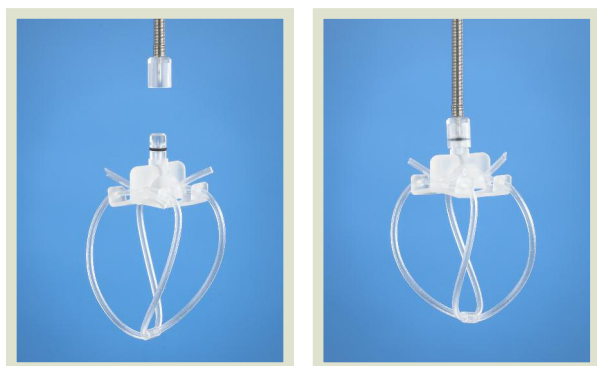


## MOUSE VAB™ ORDERING INFORMATION

CHANNELS	1	2
BUTTON	 <p>VABM1B/22: 1ch, 22ga VABM1B/25: 1ch, 25ga</p>	 <p>VABM2B/22R22: 22ga/22ga VABM2B/25R25: 25ga/25ga VABM2B/22R25: 22ga red/25ga white</p>
INJECTOR	 <p>PNP3M: 250pcs PNP3M-50: 50pcs</p>	 <p>PNP3M: 250pcs PNP3M-50: 50pcs</p>
PROTECTIVE CAP FOR GROUP HOUSING	 <p>VABM1C</p>	 <p>VABM2C</p>
TETHERS	 <p>VABM1T/25: 1ch (also connects to white port of 2ch VAB)</p>	 <p>VABM2T/25: 2ch</p>  <p>VABM2T/25GC: 2ch VABM2T/25GCV 2ch with Y</p>
BILE LOOP	n/a	 <p>VABM2L</p>
HANDLING TOOL	 <p>VABMG</p>	



## Vascular Access Harness™, Mouse, 1 Ch.

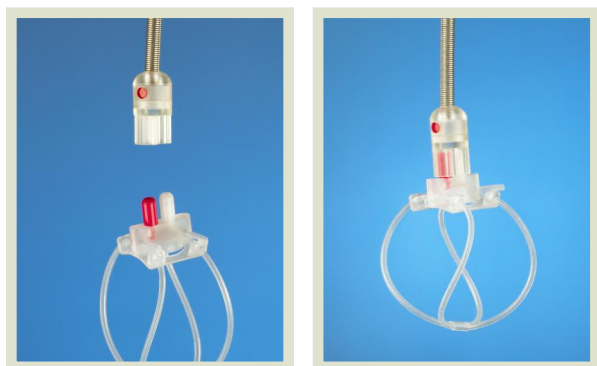


Like its larger cousin for rats, Instech's mouse VAH is installed at the time of catheterization. For best results, use polyurethane catheters that fit 22ga or 25ga, the two options for connectors on the port in the harness.

For continuous access, connect a mouse VAH tether with tubing that fits 25ga swivels. When accessing the harness port directly to infuse, withdraw or check patency, use a PNP3M injector for proper alignment and to avoid damaging the septum.

③ [www.instechlabs.com/Infusion/tethers/mousevah.php](http://www.instechlabs.com/Infusion/tethers/mousevah.php)

## Vascular Access Harness™, Mouse, 2 Ch.









This harness tether permits simultaneous blood sampling and continuous infusion of mice. Attach two externalized catheters to the two ports in this mouse harness, one red and one white. The ports can be ordered with 22ga connectors for 3Fr catheters or 25ga for 2Fr.

Flush or sample directly from the ports using a syringe fitted with a PNP3M injector. Connect the VABM2T/25 tether to access the two channels simultaneously and run the two channels through a 375/D/22LT low-torque dual channel swivel.

③ [www.instechlabs.com/Infusion/tethers/dualmousevah.php](http://www.instechlabs.com/Infusion/tethers/dualmousevah.php)

**NOTE:** While harnesses and subcutaneous buttons perform equally well with rats, customers have reported that Vascular Access Buttons (p33) perform better than harnesses with mice.

## MOUSE VAH™ ORDERING INFORMATION

CHANNELS	1	2
HARNESS	 <p>VAH62AB: 1ch, 22ga VAH62AB/25: 1ch, 25ga</p>	 <p>VAHD80-22R22: 22ga/22ga VAHD80-25R25: 25ga/25ga VAHD80-25R22: 25ga red/22ga white</p>
INJECTOR	 <p>PNP3M: 250pcs PNP3M-50: 50pcs</p>	 <p>PNP3M: 250pcs PNP3M-50: 50pcs</p>
TETHERS	 <p>VAH62T</p>	 <p>VABM2T/25</p>

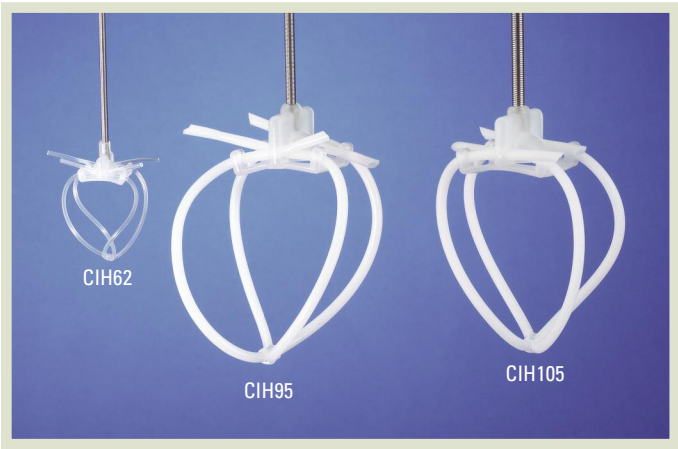
## SPECIFICATIONS

Port dead volume	3µL
Materials in fluid path	acetal, silicone, stainless steel (port) polyurethane, stainless steel (tether) polycarbonate, stainless steel (injector)
Septum durability	~200 sticks
Saddle size	.56x.56in (14x14mm)
Body surface contact area	.20in <sup>2</sup> (1.3cm <sup>2</sup> )
Standard belly band length	4.5in (11cm)
Spring type	PS62 (1ch), PS80 (2ch)
Tether length, standard	7in (18cm)
Compatible plastic swivels	375/25PS (1ch)
Compatible stainless swivels	375/25, 375/D/22LT (place 1cm 062 silicone tubing over PS62 for fit)
Catheter compatibility	22ga: 3Fr PU with ID of .60-.64mm 25ga: 2Fr PU with ID of .41-.43mm
Tether tubing, vol/cm	017x037 PU, 1.5µL/cm (VAHBPU-T25)
Harness weight	1g

# LEGACY TETHERS

## Covance Infusion Harnesses™

The original harness models feature a clear opening in the dome through which you feed catheter or infusion tubing into the spring tether and up to a swivel. There are two sizes of the harness, one for mice and one for rats. The rat harness has two options for spring diameter. The base part number includes the harness and spring tether, but parts are also available separately.



	CIH95	CIH105	CIH62
Clear lumen	.090in (2.3mm)	.105in (2.7mm)	.062in (1.6mm)
Saddle size	1.13x1.13in (2.9cm)	1.13x1.13in (2.9cm)	0.56x0.56in (1.4cm)
Body surface contact area	.82in <sup>2</sup> (5.3cm <sup>2</sup> )	.82in <sup>2</sup> (5.3cm <sup>2</sup> )	.20in <sup>2</sup> (1.3cm <sup>2</sup> )
Spring type	PS95 (12in)	PS105 (12in)	PS62 (12in)
Standard belly band length	9in (23cm)	9in (23cm)	4.5in (11cm)
Compatible swivels			
- plastic	375/22PS, 20PS	-	375/25PS
- stainless steel	any	any	any
Weight	12g	12g	3g
<a href="http://www.instechlabs.com/Infusion/tethers/cih.php">www.instechlabs.com/Infusion/tethers/cih.php</a>			

# HEAD BLOCK TETHERS

Head block tether assemblies are designed for microdialysis on freely moving animals. They provide a solid attachment to the animal with little risk of infection. Always use a counter-balanced lever arm to remove slack and to give the animal the greatest freedom of movement.

## Head Block Tether for Rats



This large lumen tether can accommodate up to two standard microdialysis probes. A 3/4in (1.9cm) slotted screw is attached to the animal's skull with dental cement. A blade on the end of the spring tether slides into the screw and is secured with a knurled tubular nut.

Part No.	Description	Unit
M115S	Head block tether for rats, sterile (spring with blade, 5 slotted screws, miniature nut)	ea
M115BS	Replacement screws for M115 tether, sterile	pkg of 5
M115TS	Replacement M115 spring w/ blade, nut, no screws	pkg of 5

www.instechlabs.com/Infusion/tethers/M115.php

## Head Block Tether for Mice



This tether uses a fine .010in diameter looped wire instead of a spring, making it lightweight and allowing it to transmit torque easily to the swivel. Attach the small peg to the animal's skull with dental cement, then connect the wire by inserting it into a hole in the peg and sliding a sleeve over it. The tether includes a special slotted clamp to attach to any of Instech's 375-series swivels.

Part No.	Description	Unit
MINF	Head block tether for mice, nonsterile (looped wire, 5 pegs & sleeves, slotted swivel clamp)	ea
MPEG	Replacement pegs and sleeves for MINF tethers	pkg of 10
MCLAMP	Slotted swivel clamp for looped-wire tethers	pkg of 5

www.instechlabs.com/Infusion/tethers/MINF.php

## SPECIFICATIONS

	M115S	MINF
Clear lumen	.115in (2.9mm)	.070in (1.8mm)
Tether type	PS115 spring	looped wire
Tether length	12in (30cm)	12in (30cm)
Base width	0.2in	0.12in
Base height	0.8in (2cm)	0.46in (1.1cm)
System weight	10g	0.3g

## Glass Ionomer Cement for Permanent Head Attachment in Rats and Mice



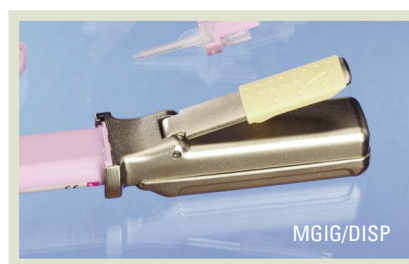
This cement has advantages over commonly used methyl-methacrylate cements: it bonds to bone, eliminating the need for bone screws in most cases, it has a lower temperature increase,

and it hardens more quickly with no noxious fumes. The cartridge has two chambers and the cement is only mixed in the disposable tips so that a cartridge does not have to be used all at once. An SOP for rodent head attachment is included.

Part No.	Description	Unit
MGIG/AKIT2	Intro kit: 1x 13.3 gm cartridge, 20 tips, plastic dispenser	ea
MGIG/ARFL	Refill kit: 2x 13.3gm cartridges, 44 tips	ea
MGIG/DISP	Metal dispenser	ea

www.instechlabs.com/Infusion/tethers/MGIG.php

Sold for laboratory research applications only.



# REPLACEMENT TETHER SPRING



Instech’s infusion tethers use a range of spring types to suit the species and number of channels. ‘H’ signifies a heavier gauge spring which may be specified on custom tethers for extra protection if the animals can bite the tether (but using a counter-balanced mount is the best way to prevent biting). Replacement springs are available in standard packs of five 12in (30cm) lengths, non-sterile. Custom lengths are available on request.

	PS62	PS80	PS95	PS95H	PS105	PS115	PS115H
Inner diameter	.065in (1.6mm)	.080in (2.0mm)	.093in (2.3mm)	.085in (2.2mm)	.108in (2.7mm)	.118in (3.0mm)	.112in (2.8mm)
Outer diameter	.085in (2.2mm)	.104in (2.6mm)	.125in (3.2mm)	.125in (3.2mm)	.152in (3.9mm)	.152in (3.9mm)	.152in (3.9mm)
Wire diameter	.010in (0.25mm)	.012in (0.3mm)	.016in (0.4mm)	.020in (0.5mm)	.022in (0.6mm)	.017in (0.4mm)	.020in (0.5mm)
	○	○	○	○	○	○	○

 [www.instechlabs.com/Infusion/tethers/spring.php](http://www.instechlabs.com/Infusion/tethers/spring.php)