

## Blood sampling volumes

The amount of blood that can be safely drawn at one time depends on the body weight and sampling frequency. A good rule of thumb is that approximately 7% of the animal's body weight is blood and you can safely remove 10% of this amount at one time.

For example, a mouse that weighs 25 g has  $25 \times 0,07 = 1,75$  ml blood, of which 10 % = 0,175 ml (175  $\mu$ l) can be removed at one time.

If blood samples are drawn repeatedly, the volume of an individual sample must be smaller in order to prevent dehydration. The limit for dehydration is 20 % of the total volume of blood in the body. The lost fluid can be replaced by fluid therapy administered to the animal subcutaneously or intravenously, but one must remember that this does not compensate for the loss of blood cells.

## Total amount of blood and recommended maximum blood sampling volumes for different animal species

Species	Amount of blood (ml)	7.5 % (ml)	10 % (ml)	15 % (ml)	20 % (ml)
Mouse (25 g)	1,8	0,1	0,2	0,3	0,4
Rat (250)	16	1,2	1,6	2,4	3,2
Rabbit (4 kg)	224	17	22	34	45

## Blood sample size and recovery period between samples

Individual blood sample		Repeated blood sample	
% of the whole blood volume	Required recovery period	% of the whole blood volume drawn within 24 h	Required recovery period
7,5 %	1 week	7,5 %	1 week
10 %	2 weeks	10-15 %	2 weeks
15 %	4 weeks	20 %	3 weeks

Tables based on: Diehl K-H et. al. A good practice guide to the administration of substances and removal of blood, including routes and volumes. Journal of Applied Toxicology 21:15–23, 2001