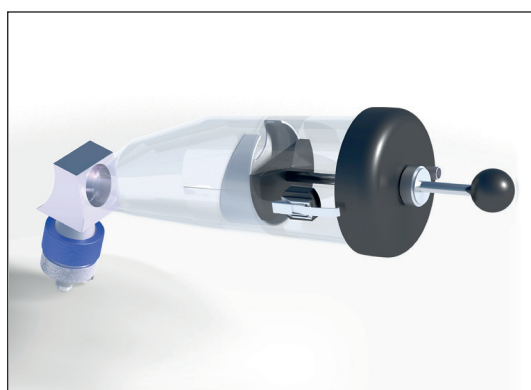




Applications

With the Rat Nose-Only exposure module connected to PreciseInhale, rats can be exposed to aerosols for *in vivo* studies. Short duration inhalation exposures to respirable aerosols, a clinically relevant method for pulmonary drug delivery.

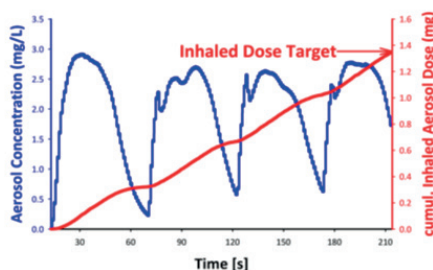


Features

- > One animal exposed at a time
- > Monitoring breathing pattern of the rat
- > Monitoring the aerosol concentration
- > Precise dosing with the Active Dose-Control System
- > Low substance consumption

Benefits

- > Allows practical treatment schedule
- > Exposures staggered to suit optimal post-exposure treatment schedule
- > Individual control of inhaled dose (standard deviation usually <10%)
- > High precision when repeating exposures in several animals
- > Ideal for repeated exposure series
- > < 100 mg for a typical PK study
- > Less variations, more reliable data
- > 3R – reduced number of animals required



The aerosol concentration (from repeated aerosol generation cycles) and the cumulative inhaled aerosol dose as logged during the nose only exposure of one rat.

Rat Nose-Only Exposure Module

Art. No.: PIEMreno1

Inhalation
Sciences



Technical specifications

Rat nose-only exposure unit	10 x 42 x 9 cm (W x D x H)
Weight	0.6 kg
Rodent exposure table	22 x 25 x 36 cm (W x D x H)
Weight	7.7 kg
Harvard pump	32.5 x 20 x 25 cm (W x D x H)
Weight	9.5 kg
Verified generation modules	Dry powder aerosol generator
	Inhaler aerosol generator
	Nebulizer aerosol generator
Suitable exposure object	Rats
Exposure flow rate	50 – 500 mL/min
Inhalation yield	Dry powder aerosol generator typically 3-7%
	Inhaler aerosol generator (pMDI only) typically 3-7%
	Nebulizer aerosol generator typically 8-15%
Consumables	6 mm GF/A filters x 400 (PICf6x400)
	25 mm GF/A end-filters x 100 (PICf25x100)
Components	<i>Rat Nose-Only exposure unit:</i> <ul style="list-style-type: none">• Nose-Only exposure block• 2 pcs Rat restrainer tube• 2 pcs Breathing capacitor for rat restrainer• Nose-Only lung-phantom exposure kit <i>In vivo exposure base kit:</i> <ul style="list-style-type: none">• <i>In vivo</i> end filter holder• 2-way non-rebreathing valve• Rodent exposure table• Rodent ventilator (for phantom exposures)• Extra-fine forceps

For typical nose-only inhalation exposures, the dose rate [μg lung deposition/min] with the PreciseInhale was 3.7 μg /min, which is 19-37 times higher than with other methods for aerosol generation (WDF) - ref. Fioni *et al.*, 2017.