

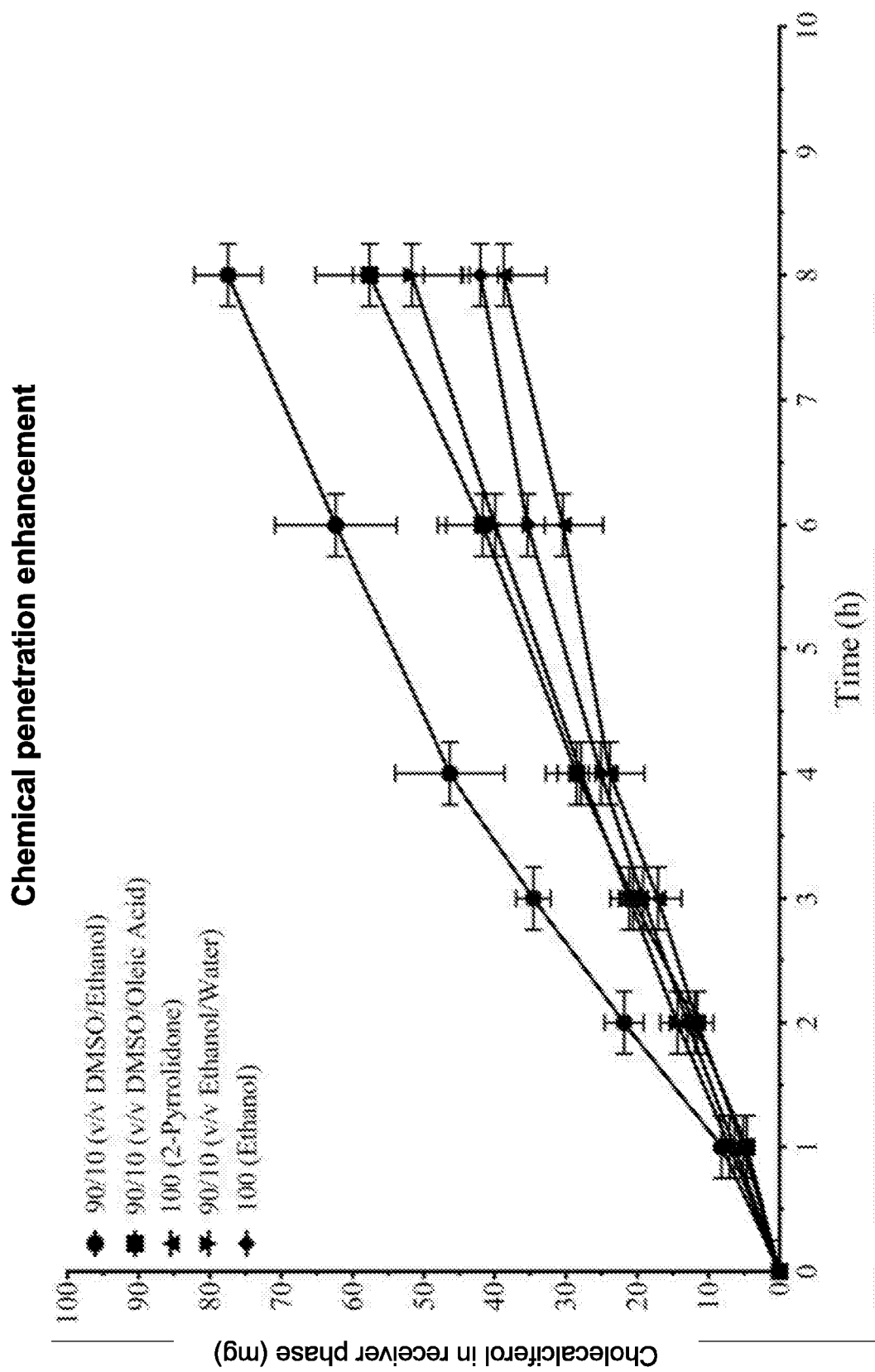


Fig. 1

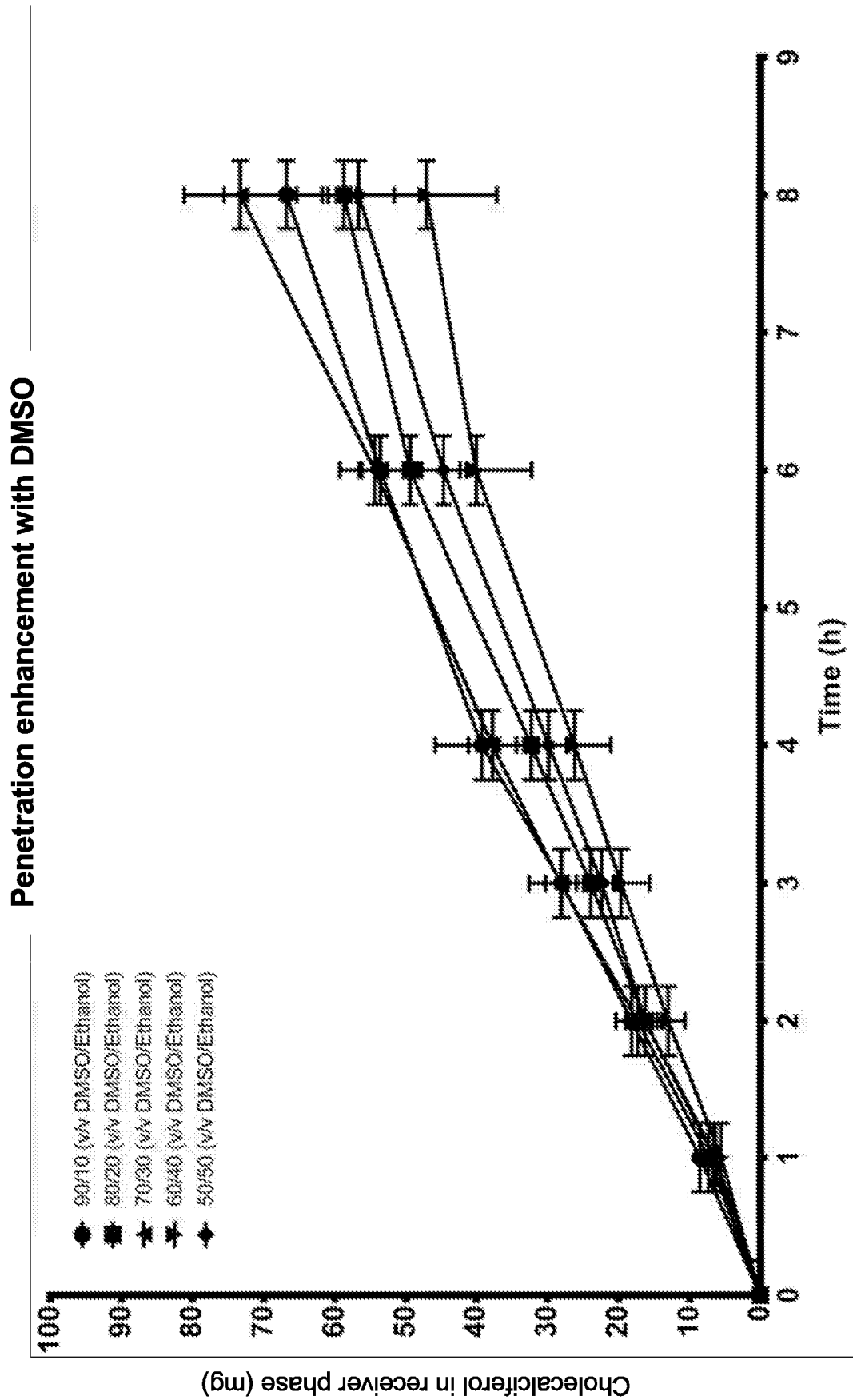


Fig. 2

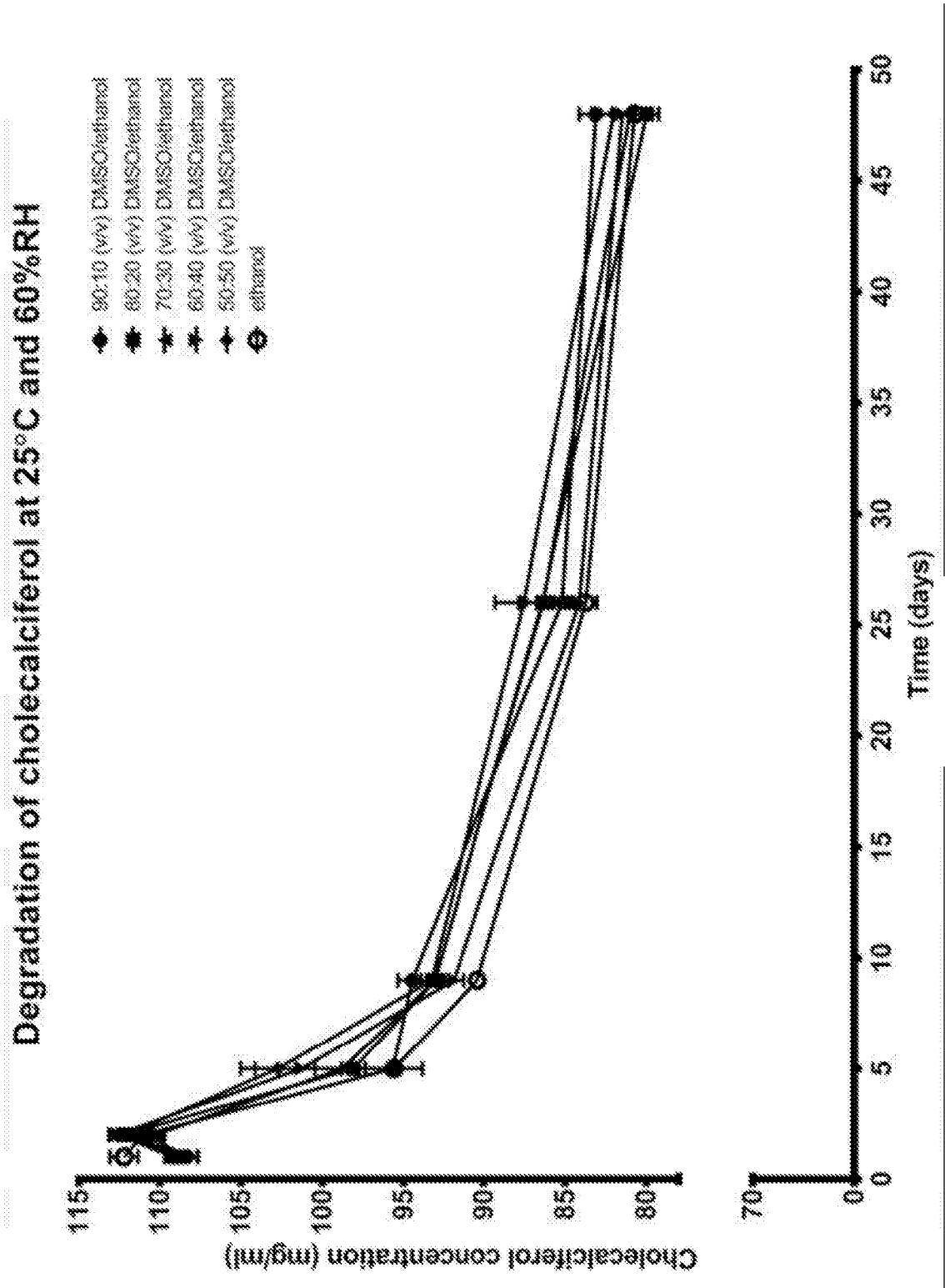
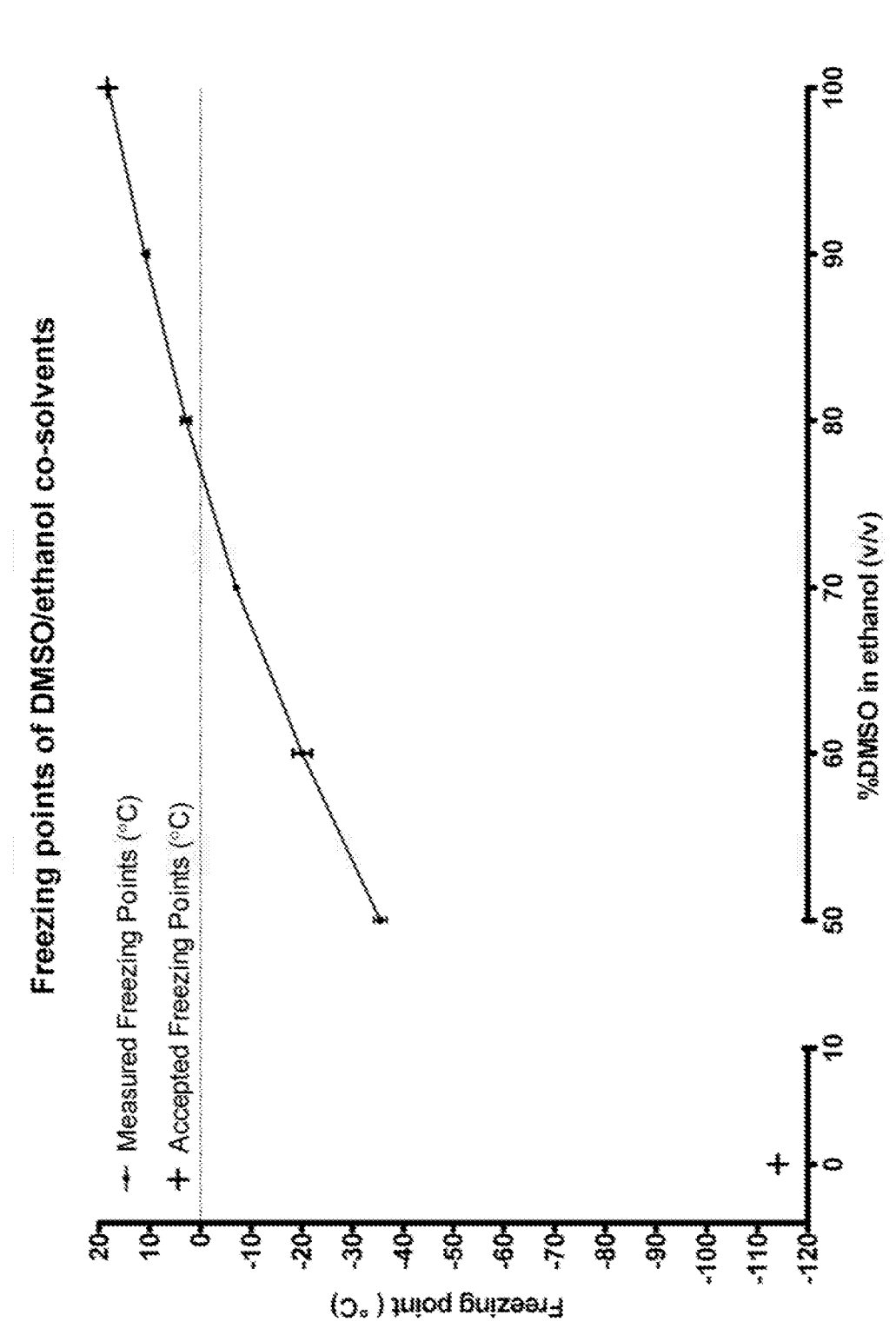


Fig. 3

**Fig. 4**

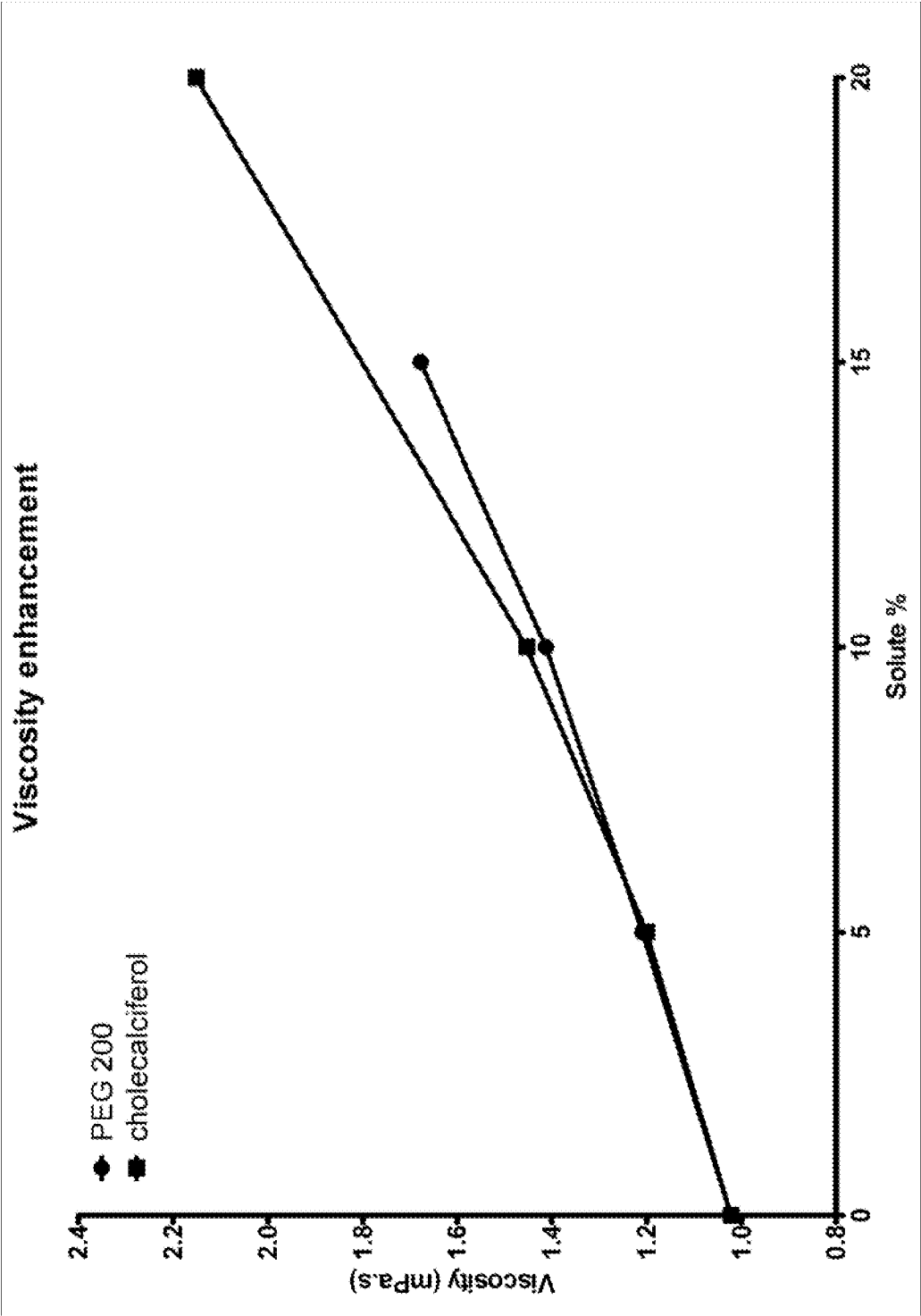


Fig. 5

In-vitro model (Cellulose tubing): Comparison of chemical penetration enhancers

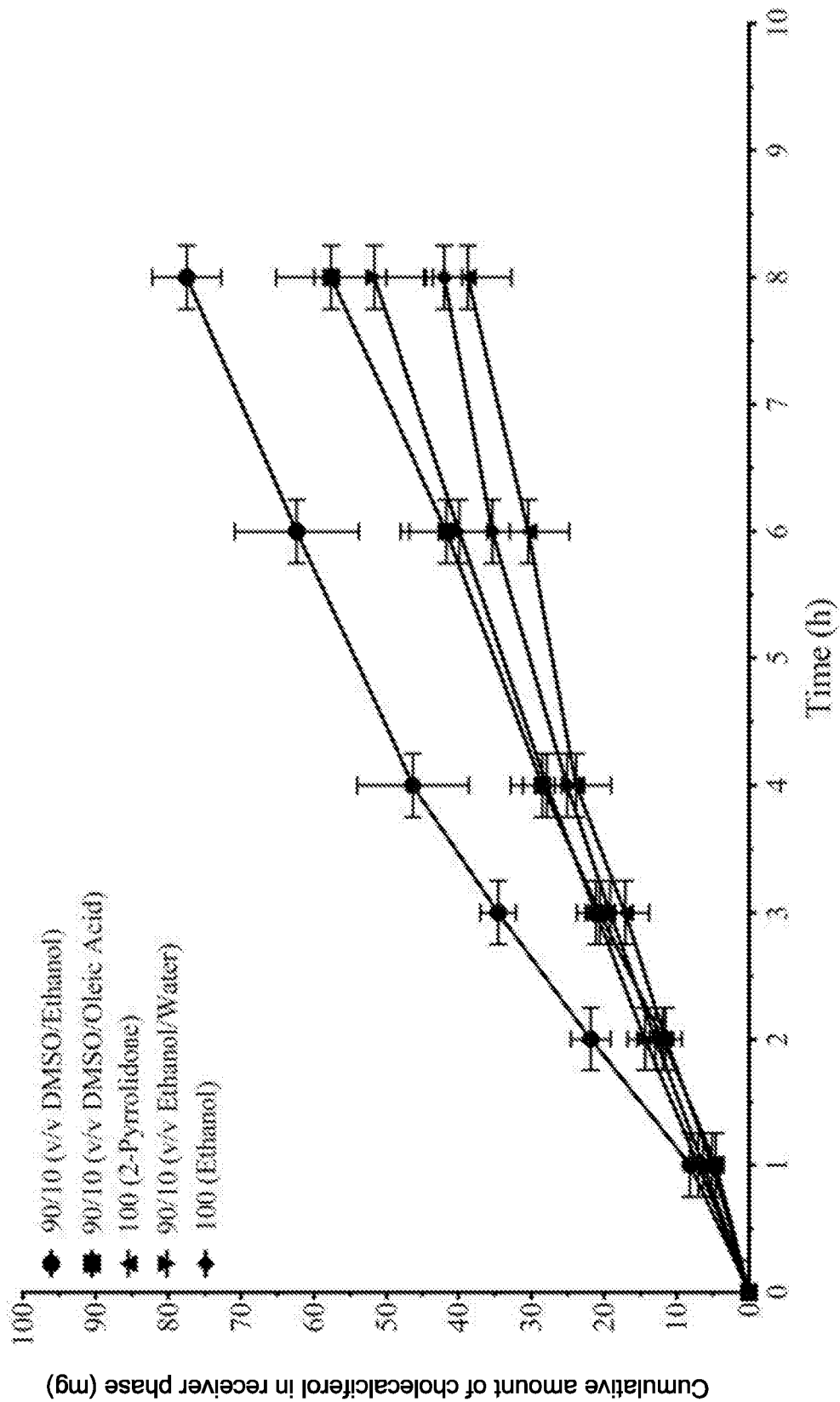


Fig. 6

In-vitro model (Cellulose tubing): DMSO/ethanol co-solvent penetration enhancement

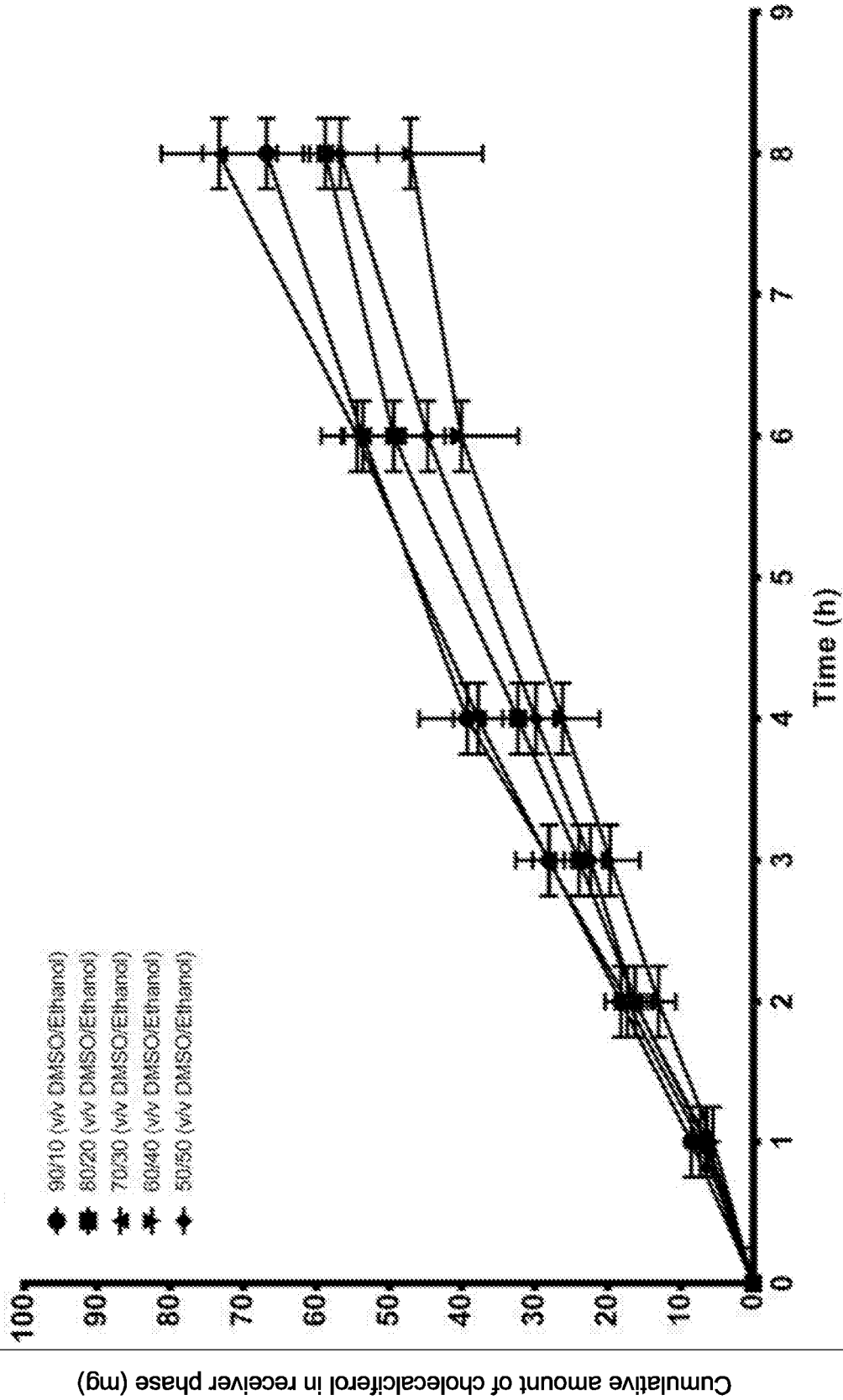


Fig. 7

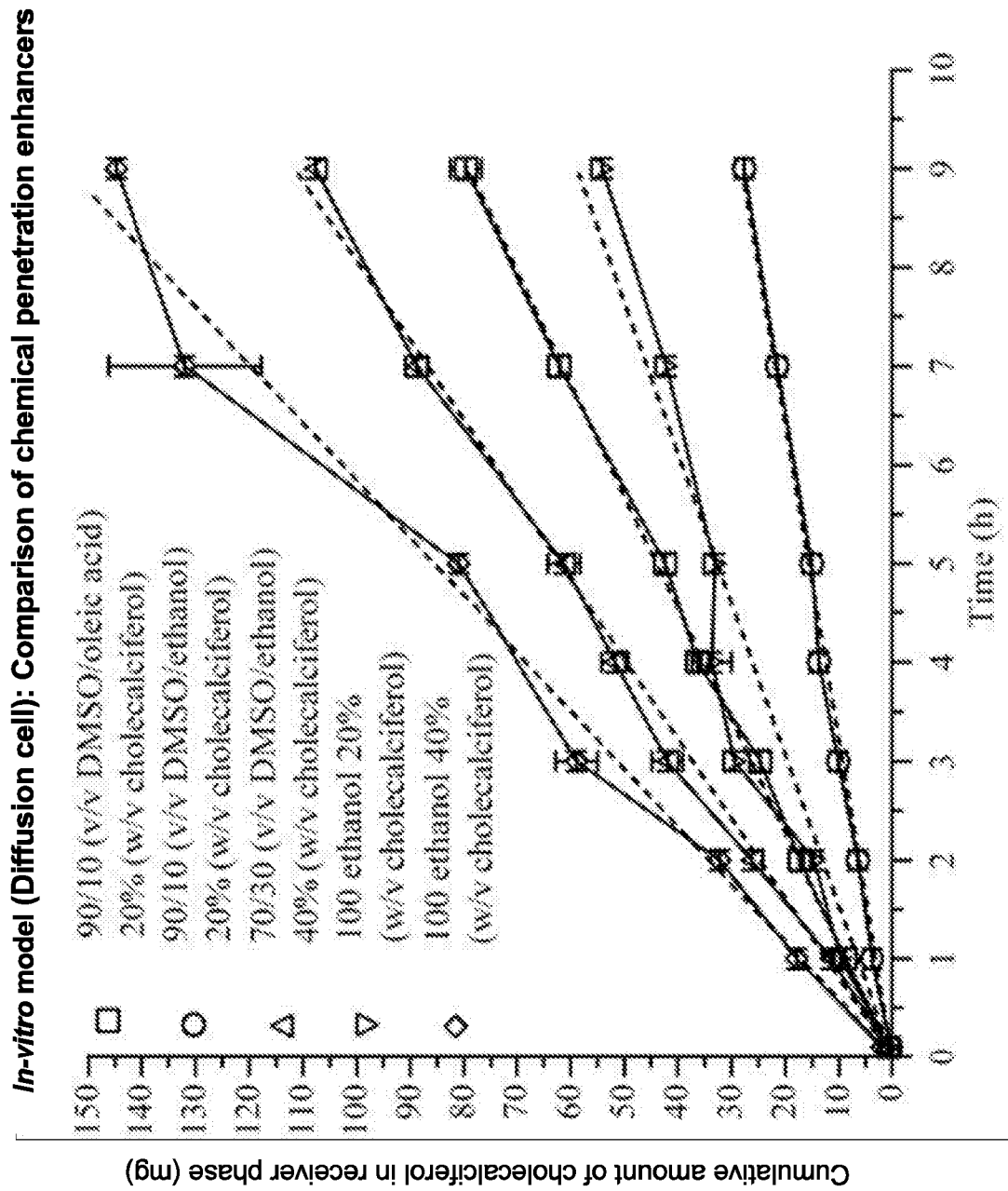


Fig. 8

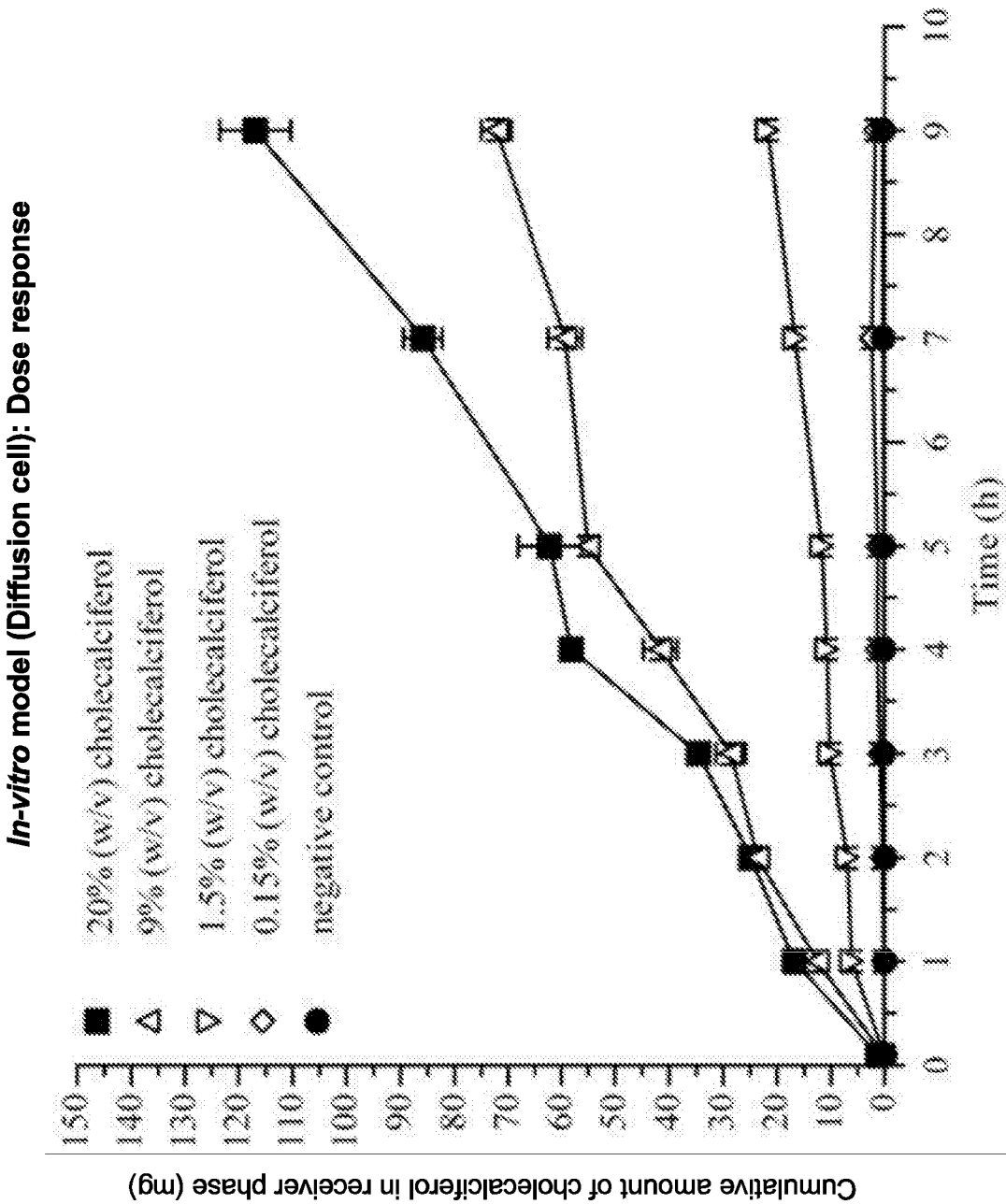
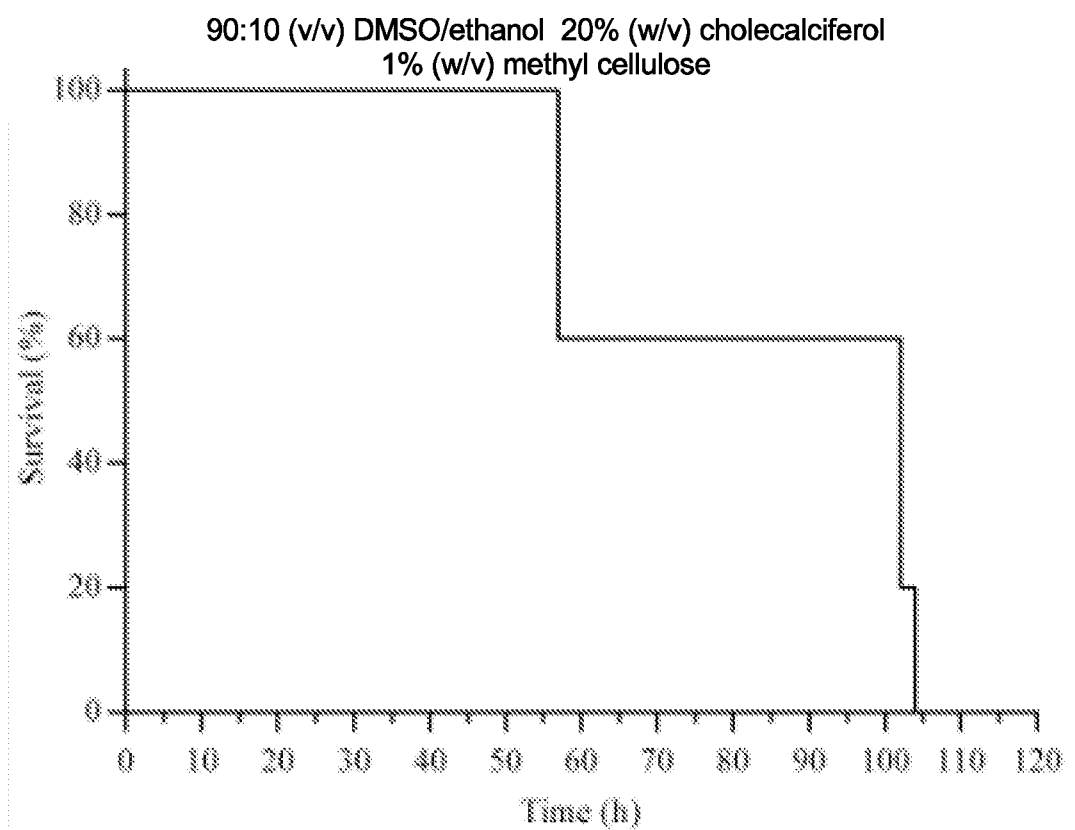
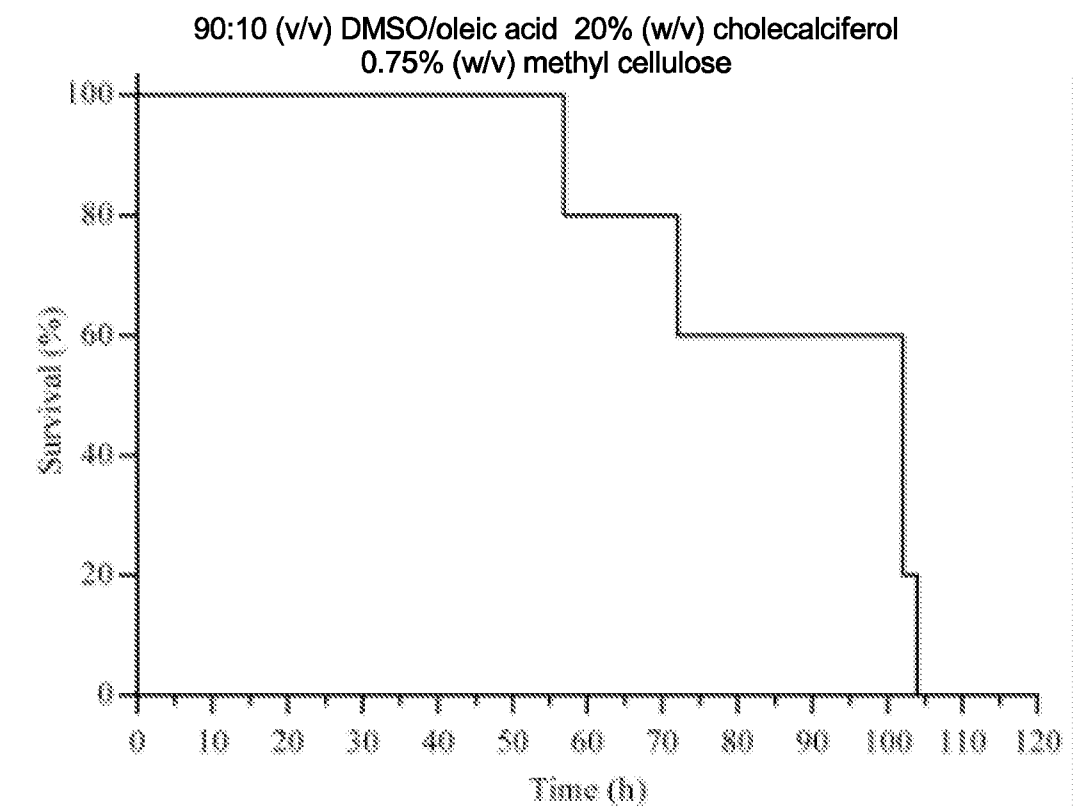
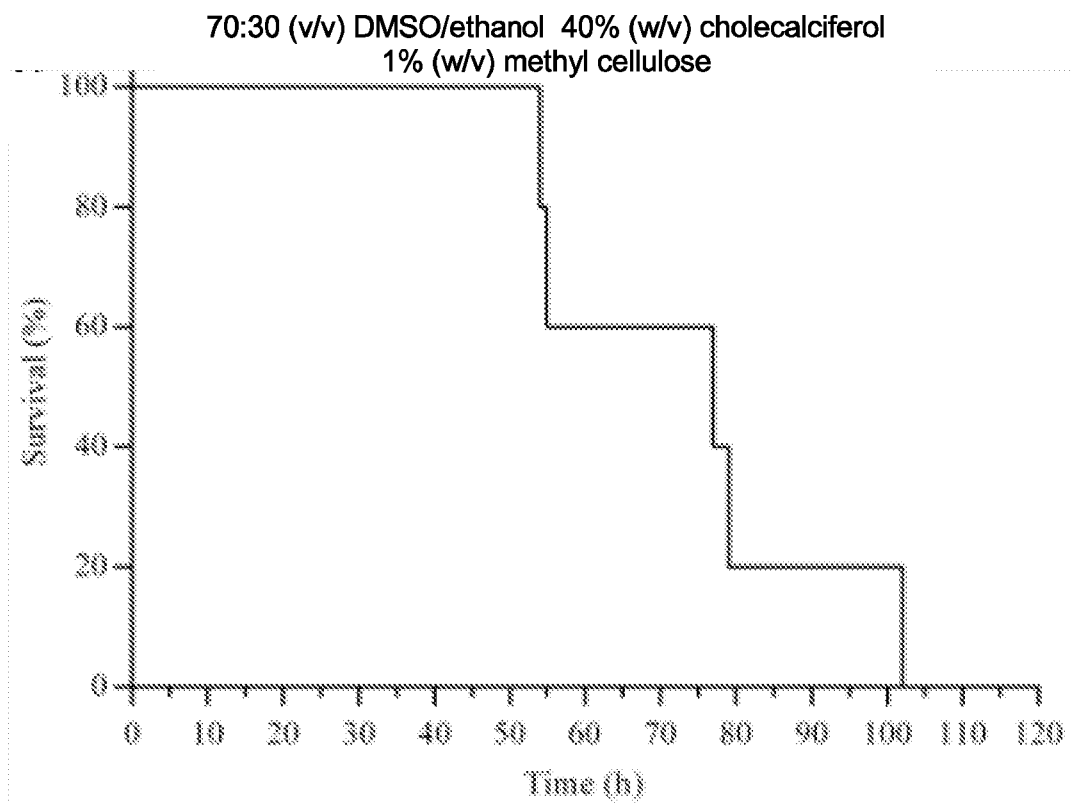
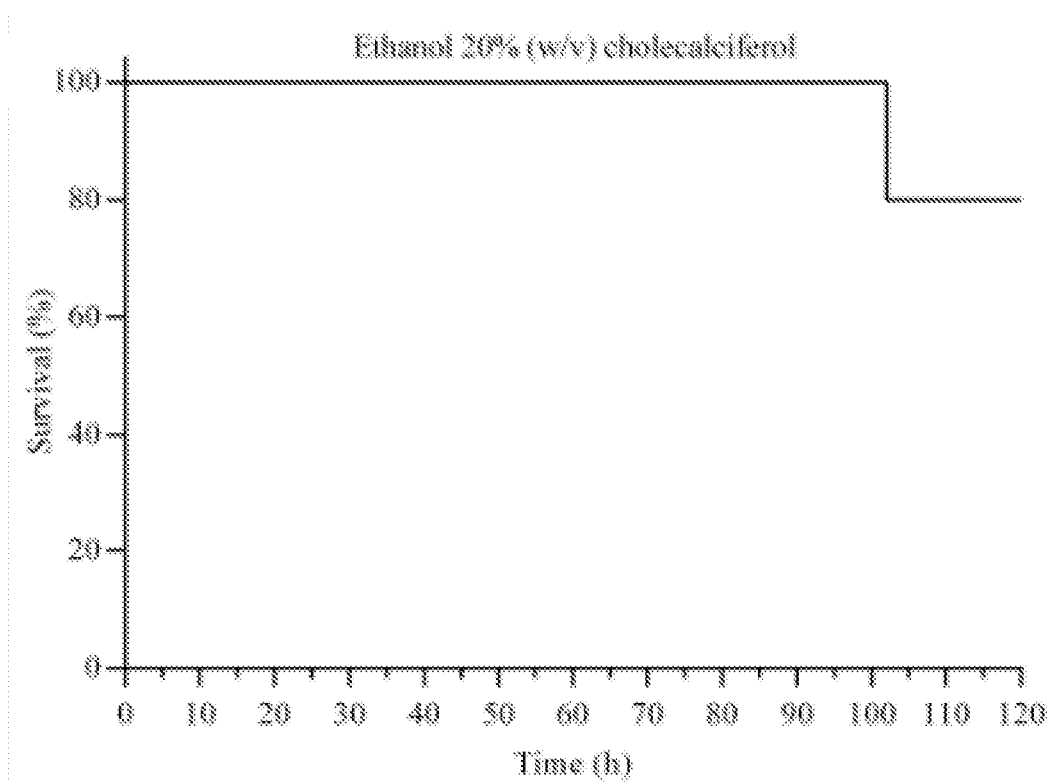
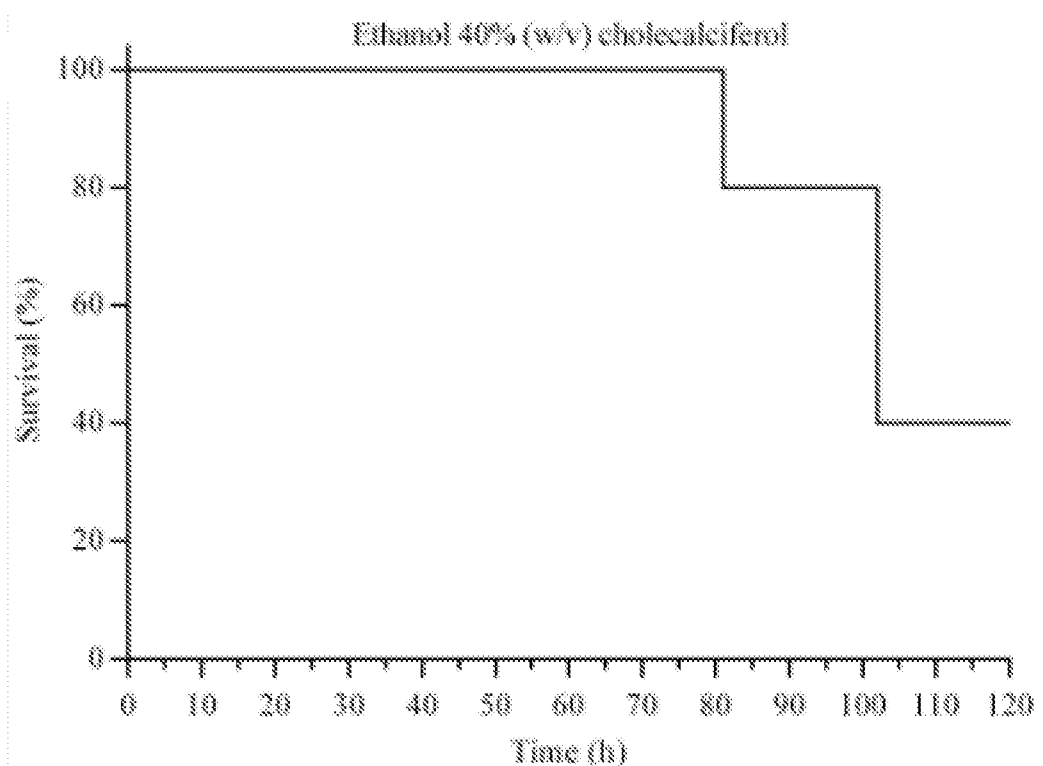
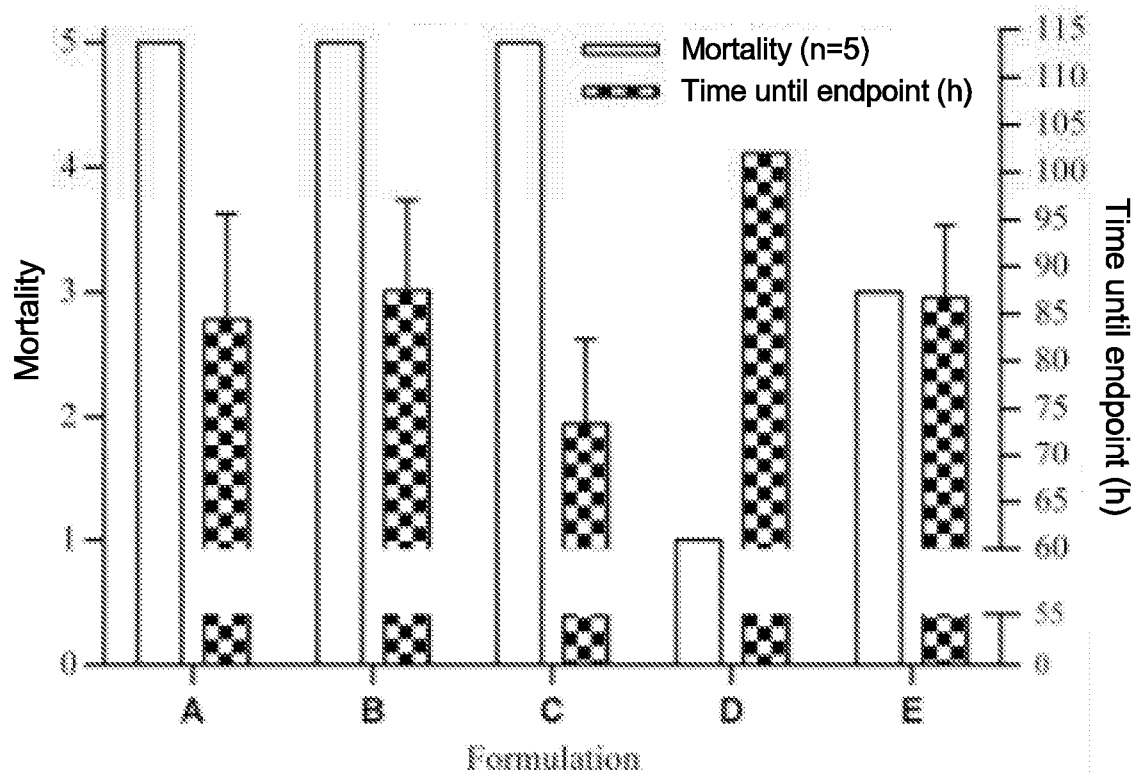


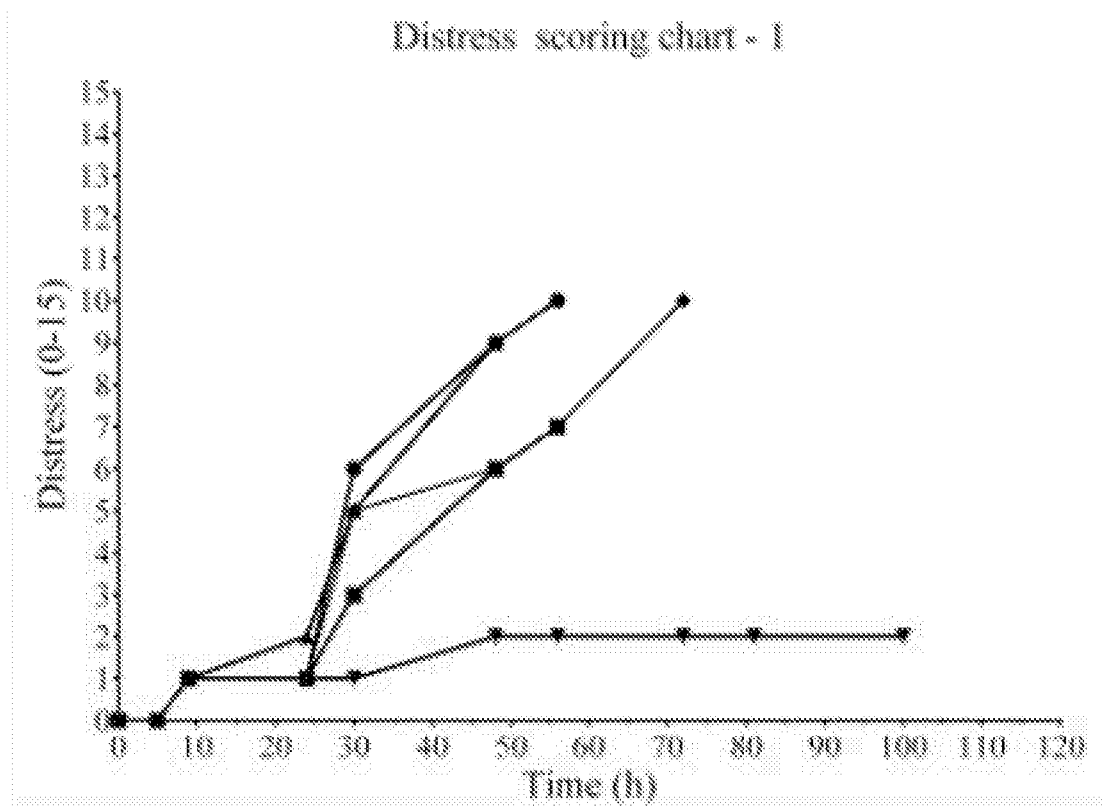
Fig. 9

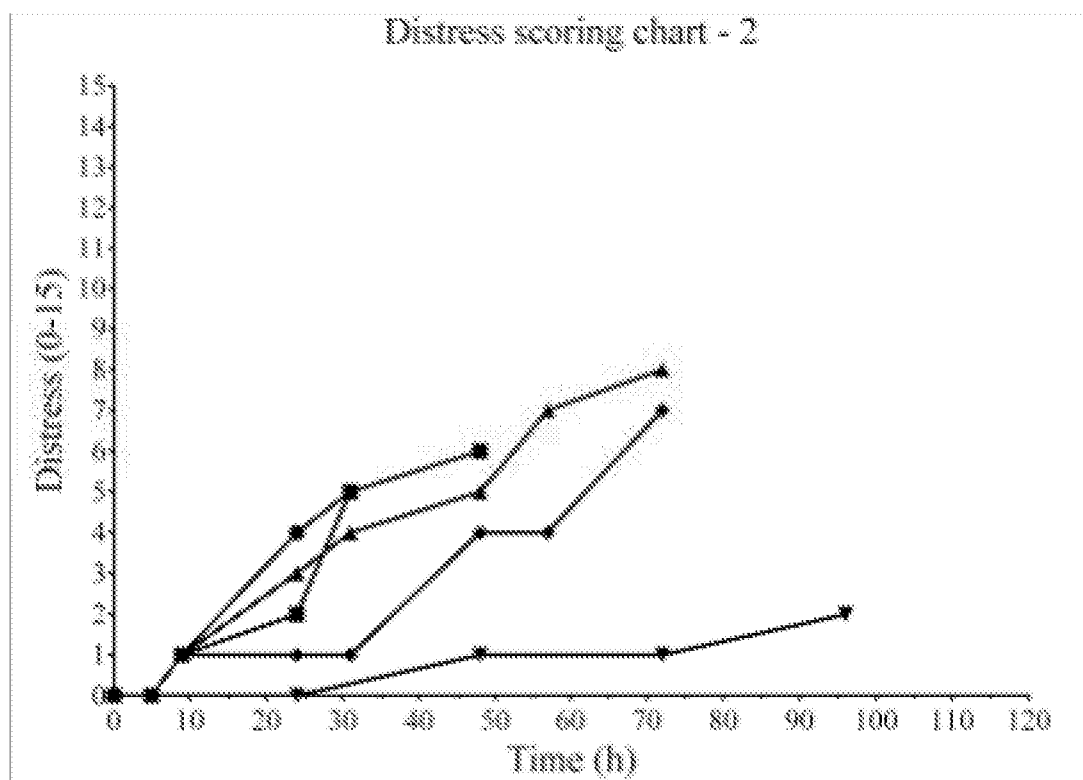
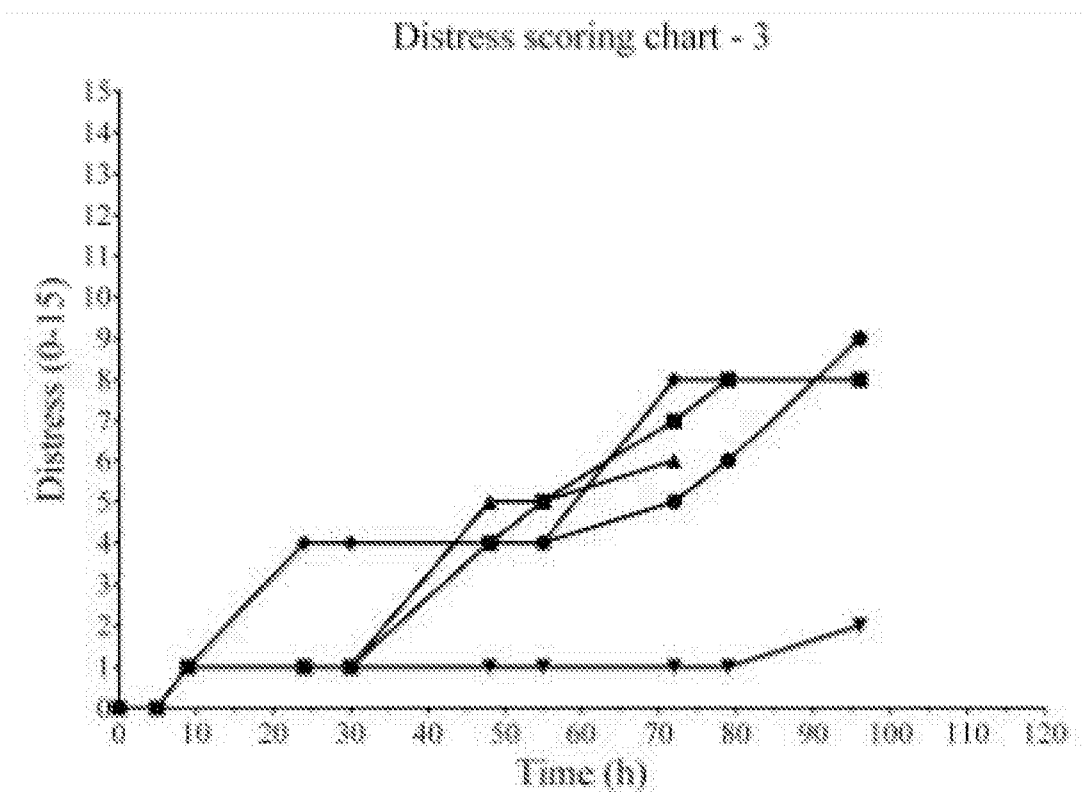
**Fig. 10(a)****Fig. 10(b)**

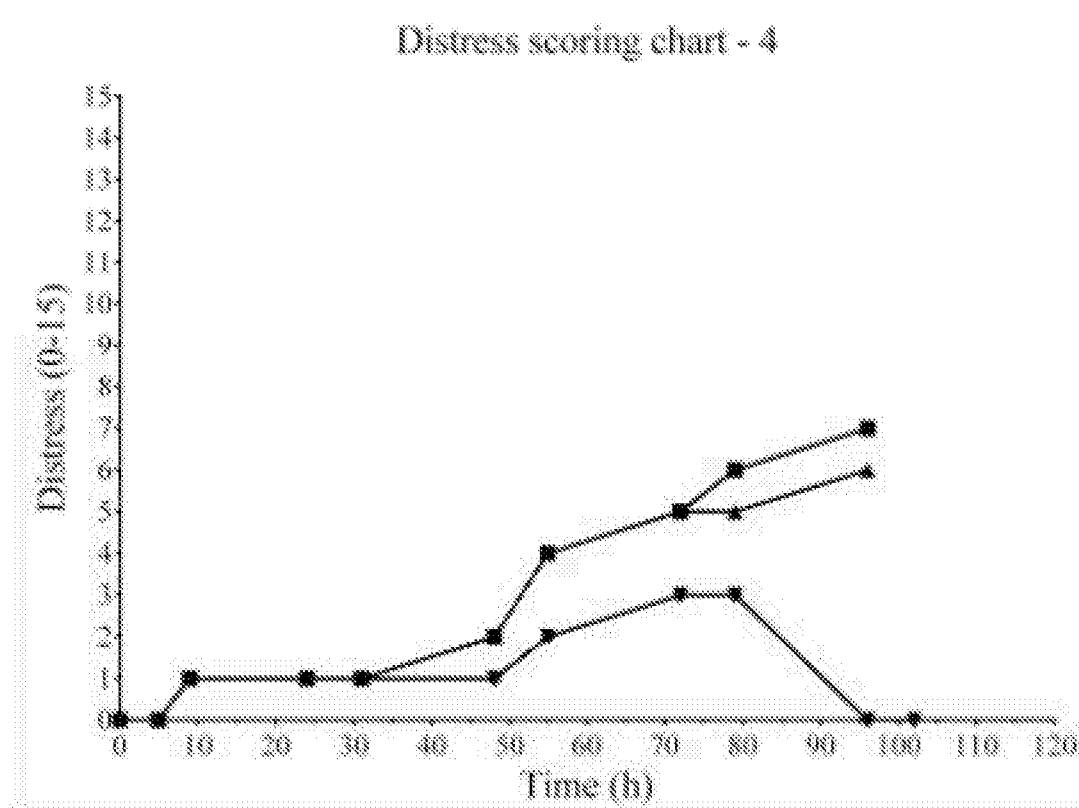
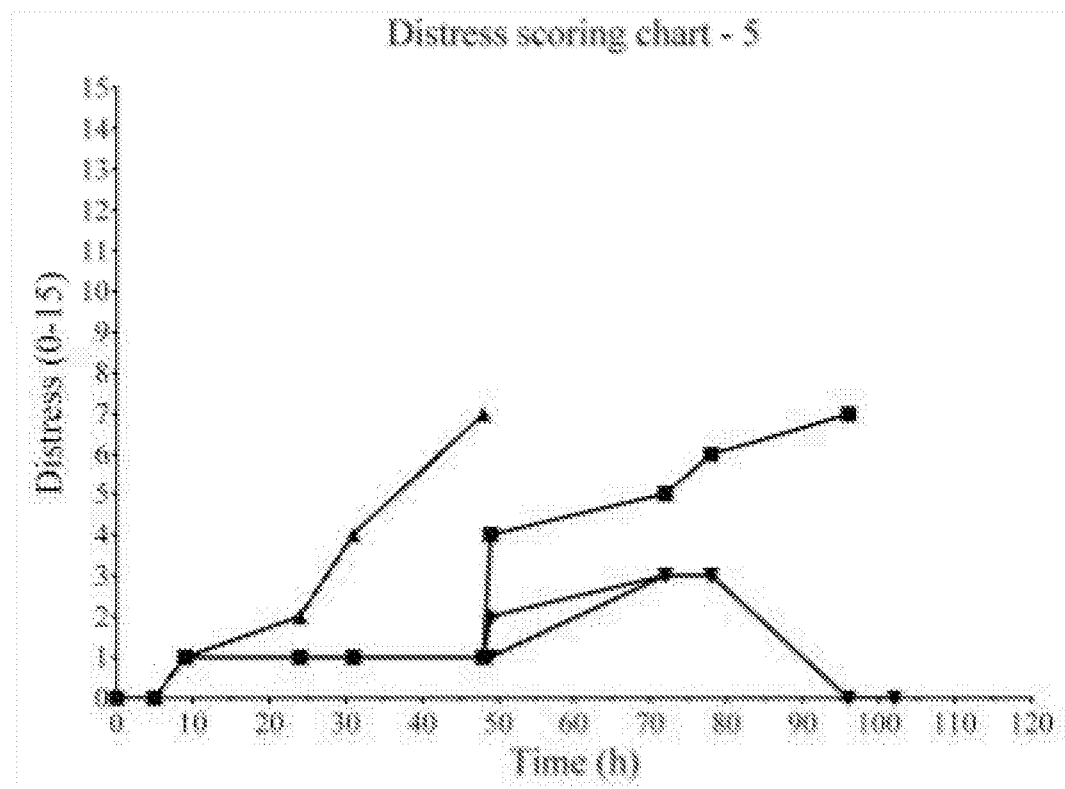
**Fig. 10(c)****Fig. 10(d)**

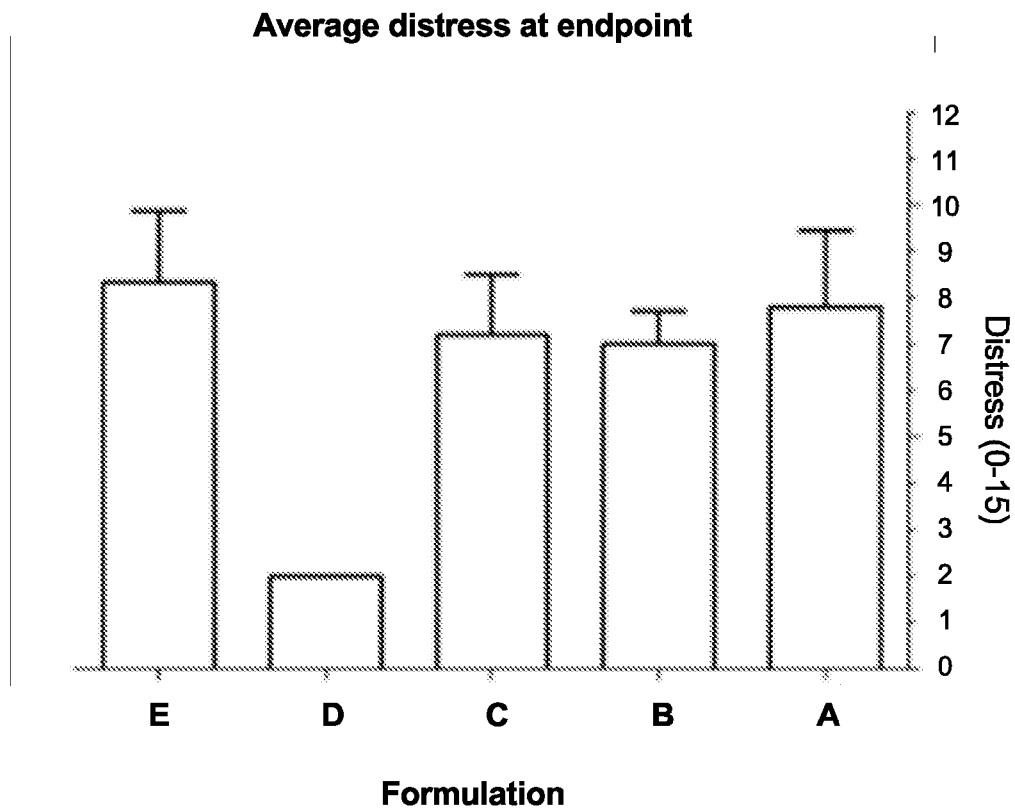
**Fig. 10(e)****Mortality and Time until endpoint vs Formulation****Fig. 10(f)**

- 90:10 DMSO/Ethanol (20% w/v cholecalciferol)
- 90:10 DMSO/Oleic Acid (20% w/v cholecalciferol)
- ★ 70:30 DMSO/Ethanol (40% w/v cholecalciferol)
- ✱ 100 Ethanol (20% w/v cholecalciferol)
- ◆ 100 Ethanol (40% w/v cholecalciferol)

**Fig. 11(a)**

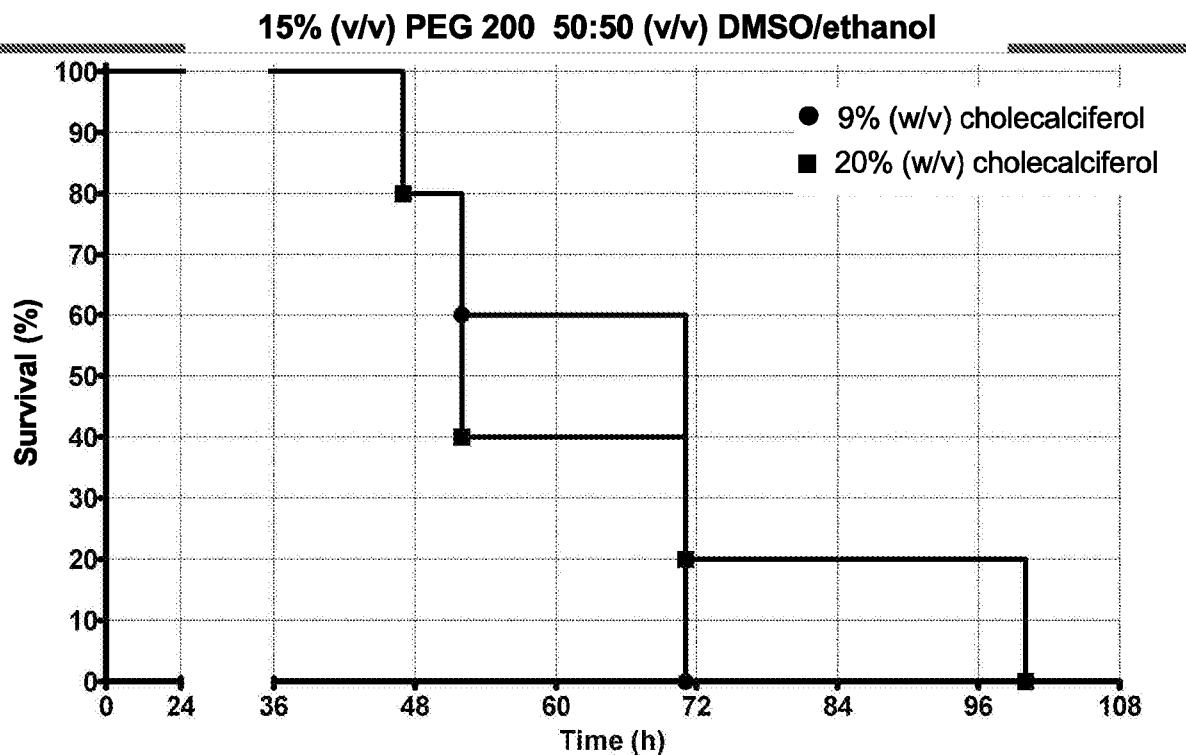
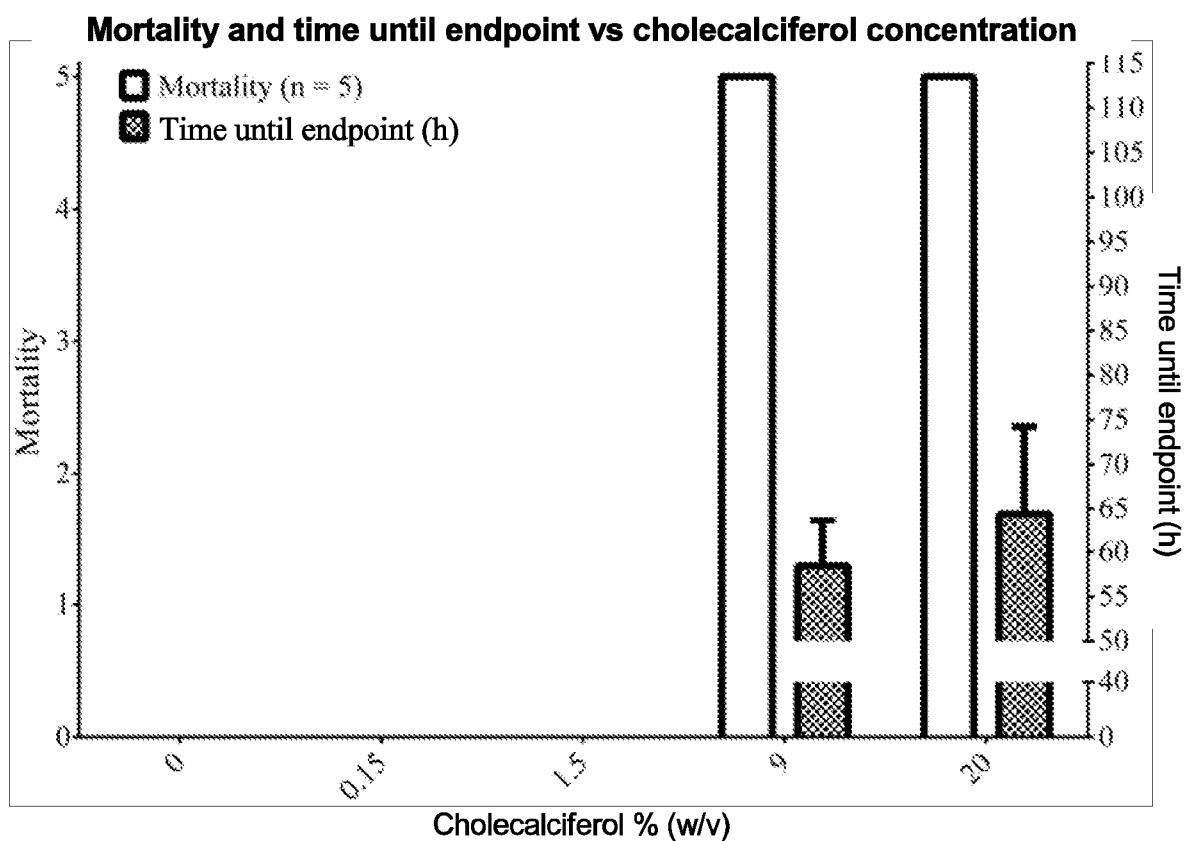
**Fig. 11(b)****Fig. 11(c)**

**Fig. 11(d)****Fig. 11(e)**



- A** 90:10 DMSO/Ethanol (20% (w/v) cholecalciferol) (1% (w/v) methyl cellulose)
- B** 90:10 DMSO/Oleic acid (20% (w/v) cholecalciferol) (0.75% (w/v) methyl cellulose)
- C** 70:30 DMSO/Ethanol (40% (w/v) cholecalciferol) (1% (w/v) methyl cellulose)
- D** 100 Ethanol (20% (w/v) cholecalciferol)
- E** 100 Ethanol (40% (w/v) cholecalciferol)

Fig. 12

**Fig. 13(a)****Fig. 13(b)**

- Distress score
- ✕ Rat weight

0% (w/v) cholecalciferol dose (control)

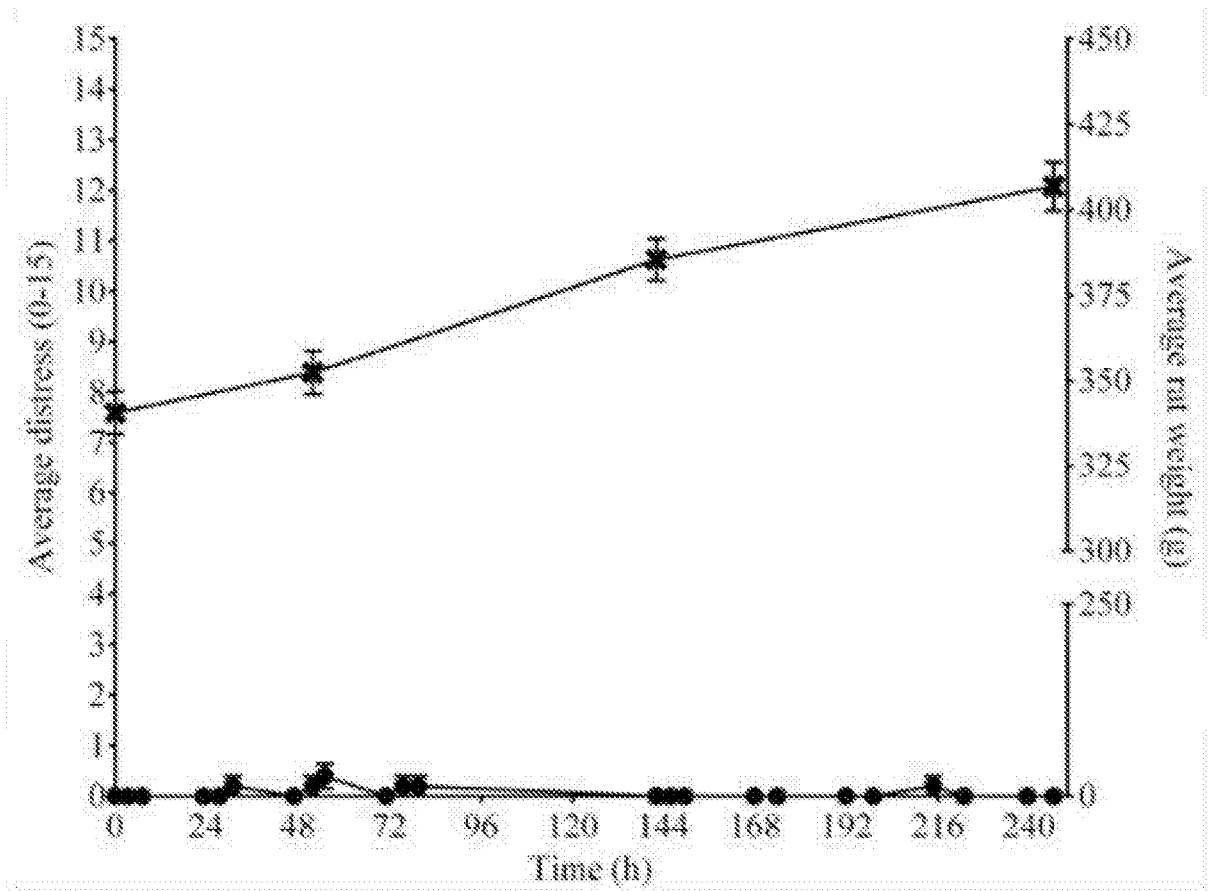
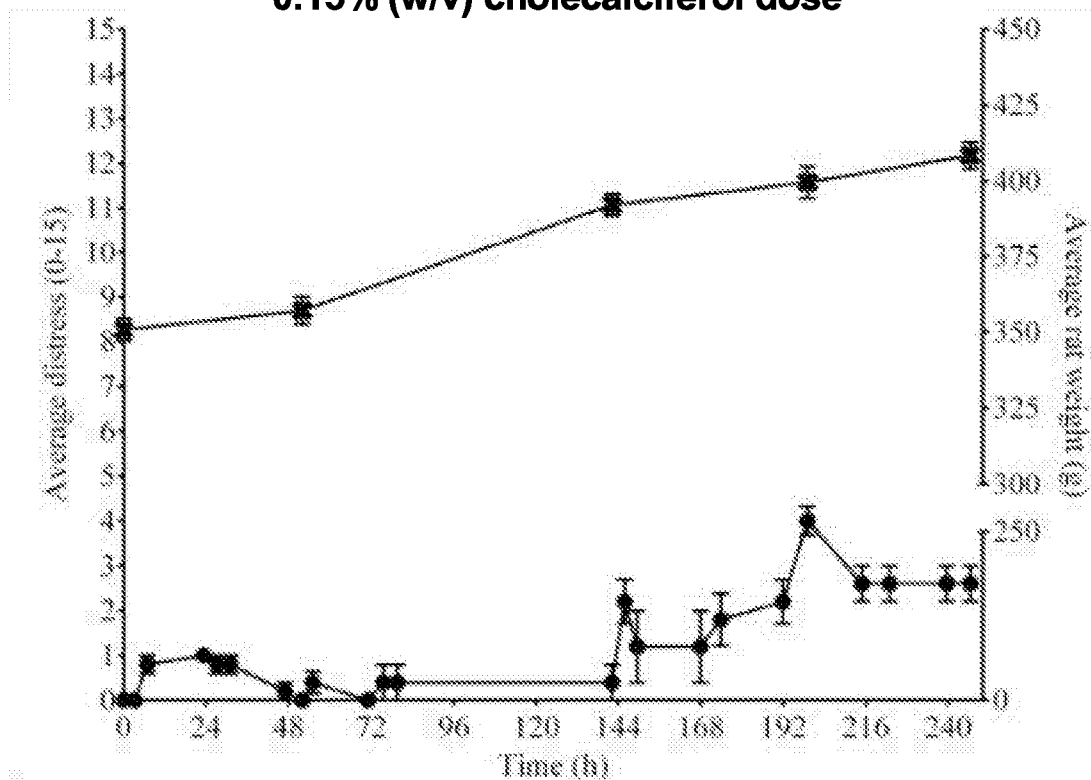
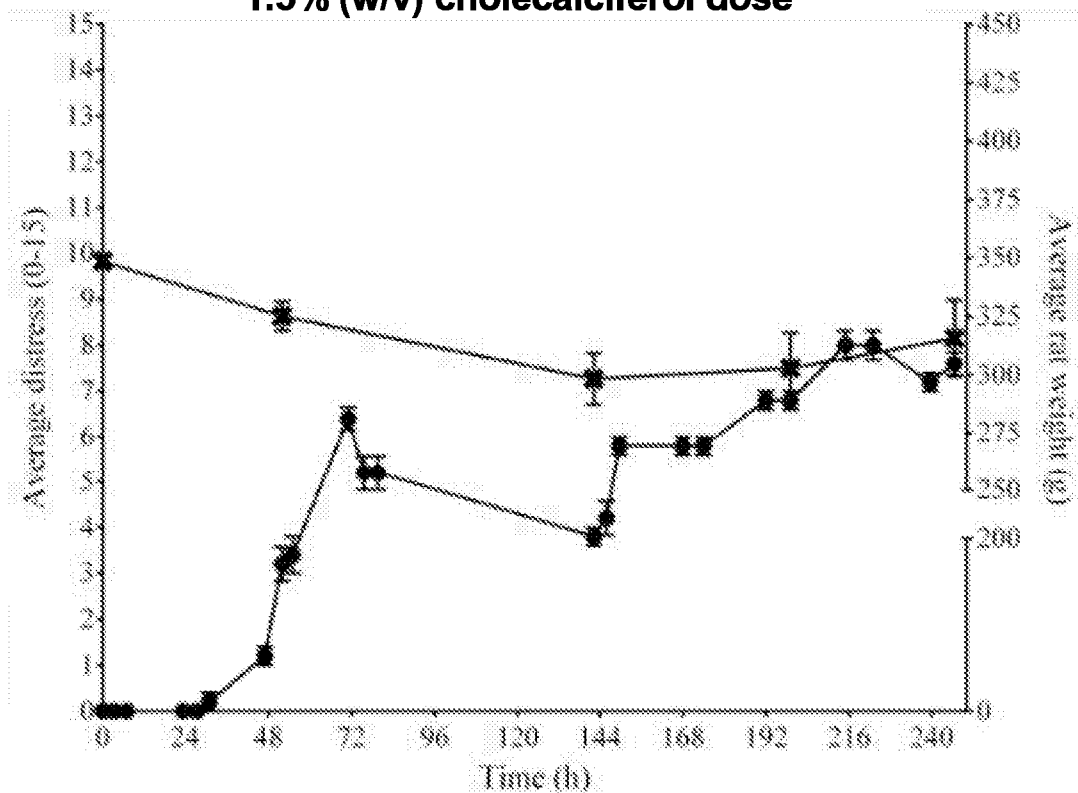
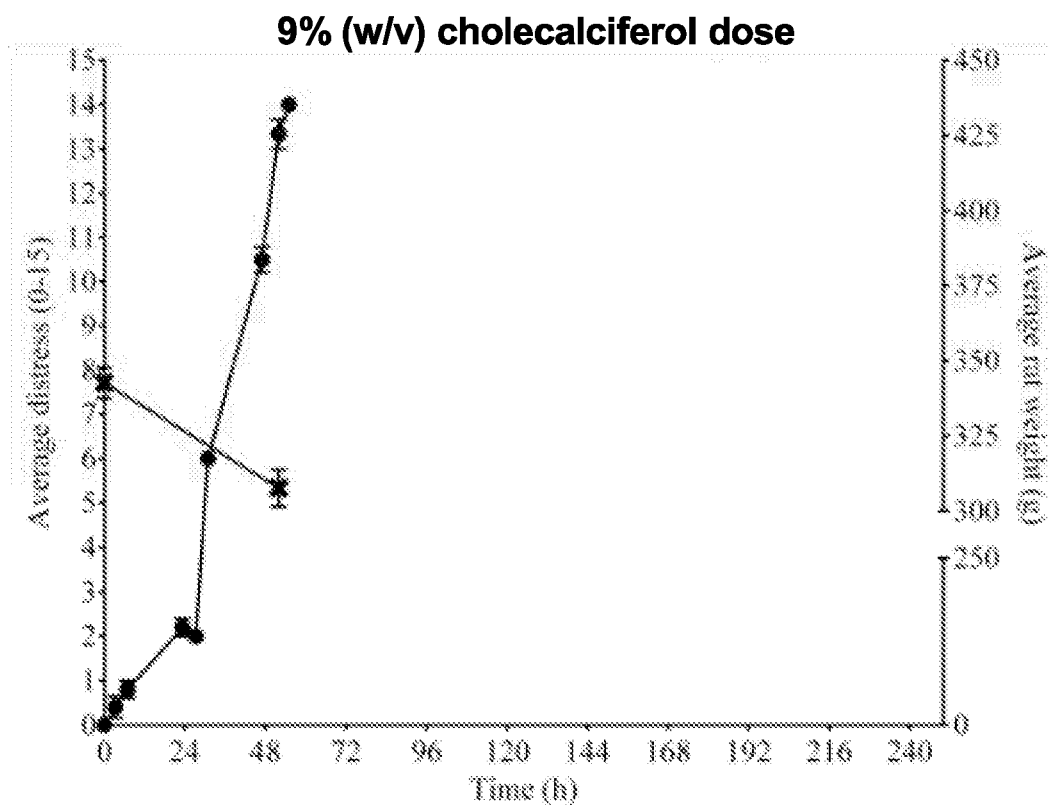
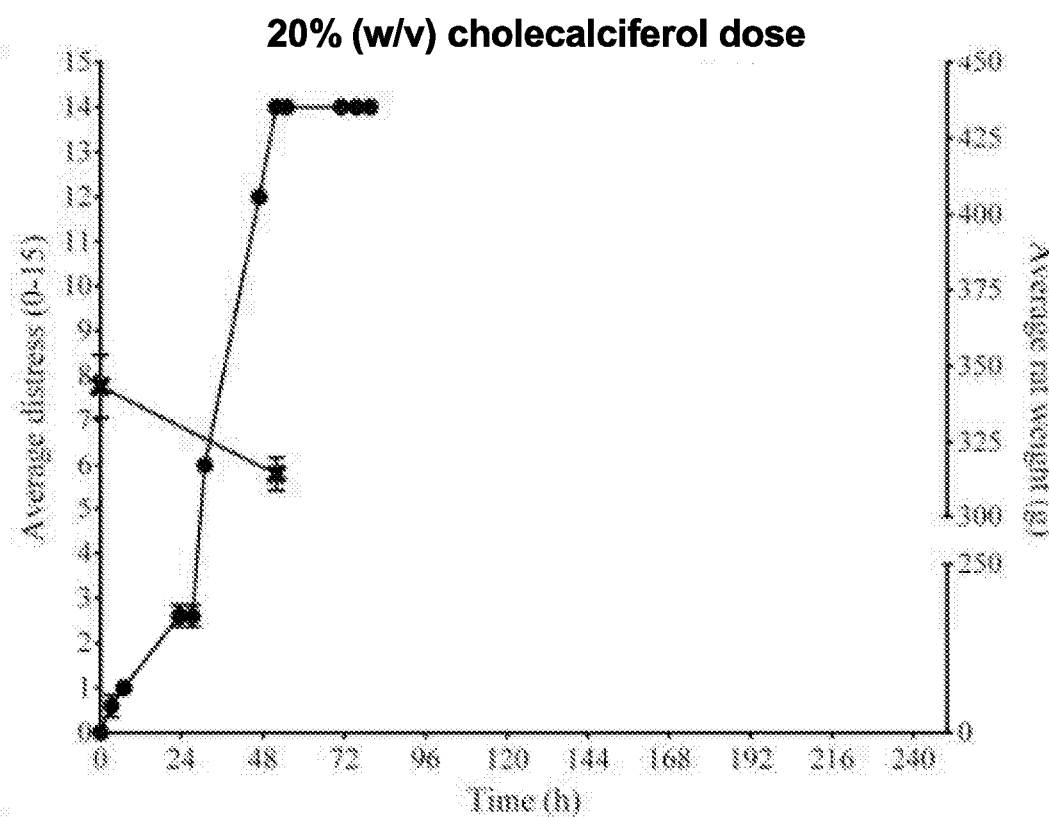
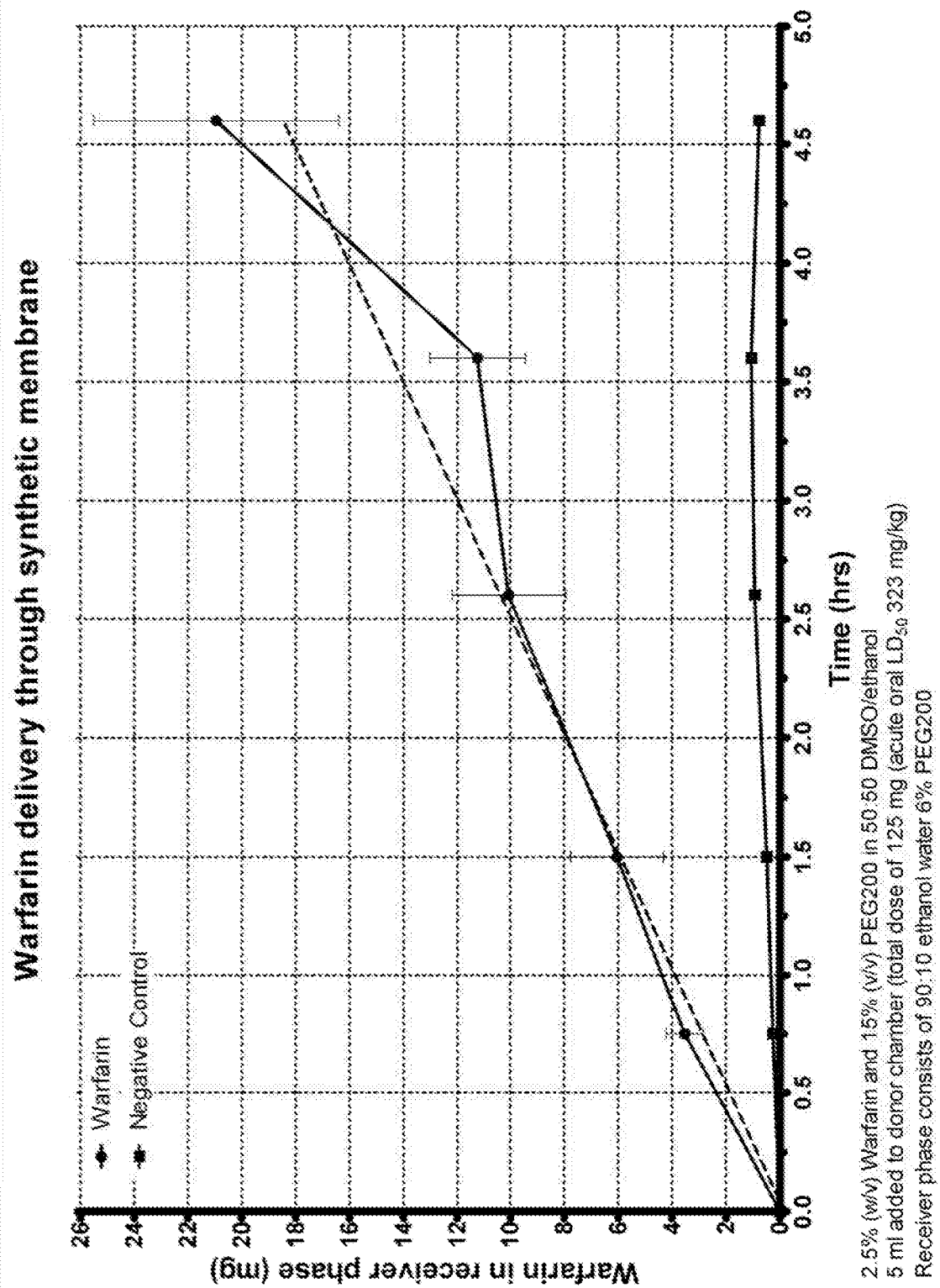
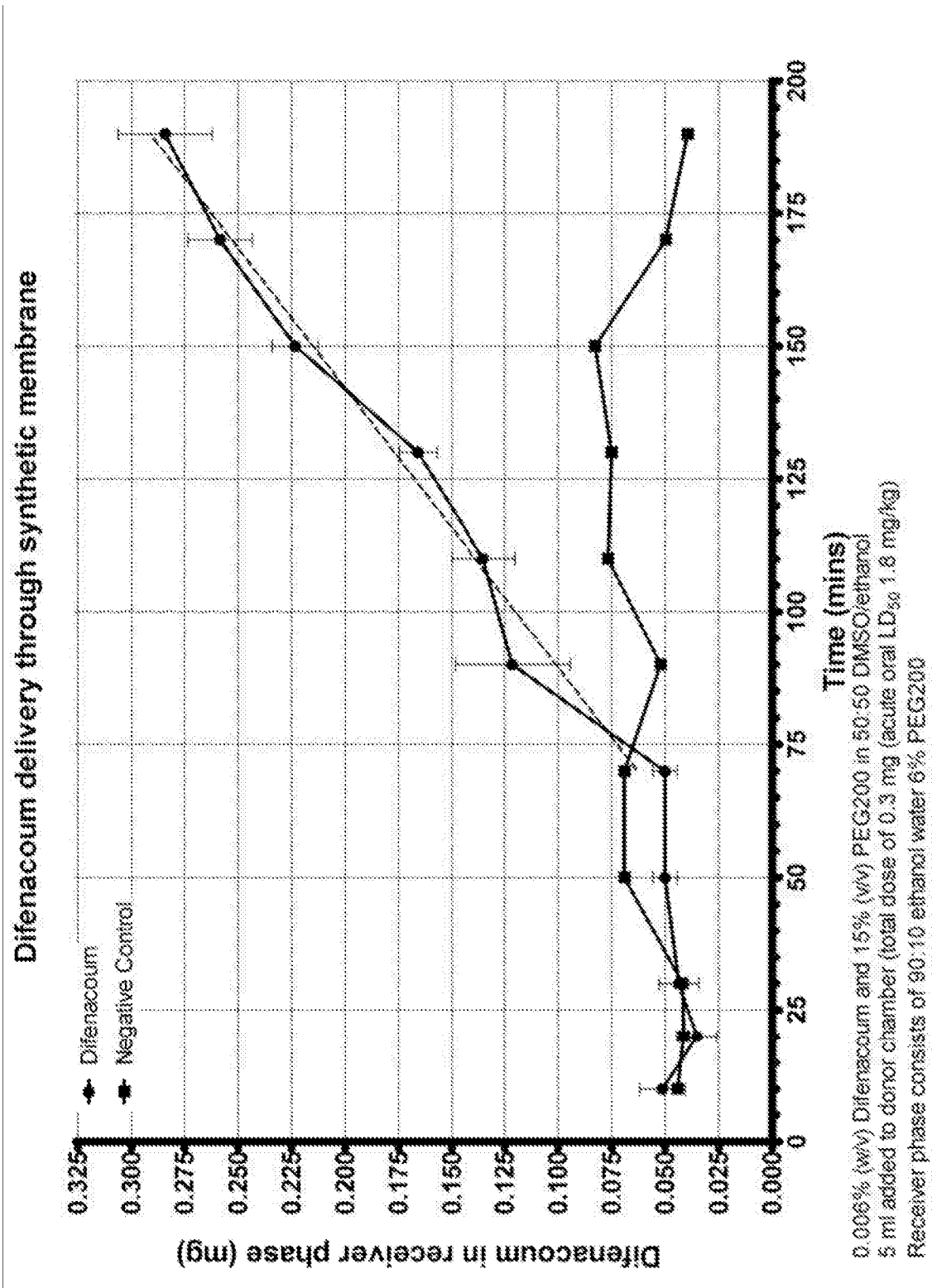


Fig. 14(a)

0.15% (w/v) cholecalciferol dose**Fig. 14(b)****1.5% (w/v) cholecalciferol dose****Fig. 14(c)**

**Fig. 14(d)****Fig. 14(e)**

**Fig. 15**

**Fig. 16**

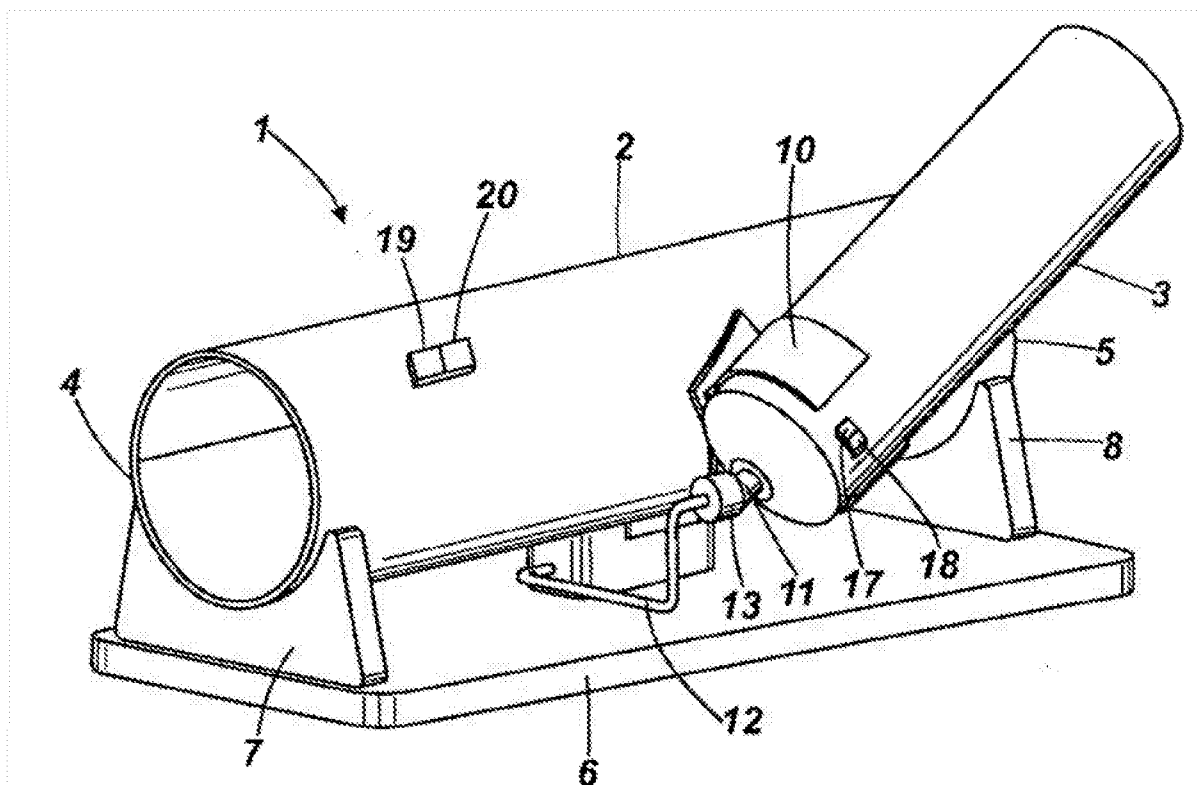


Fig. 17

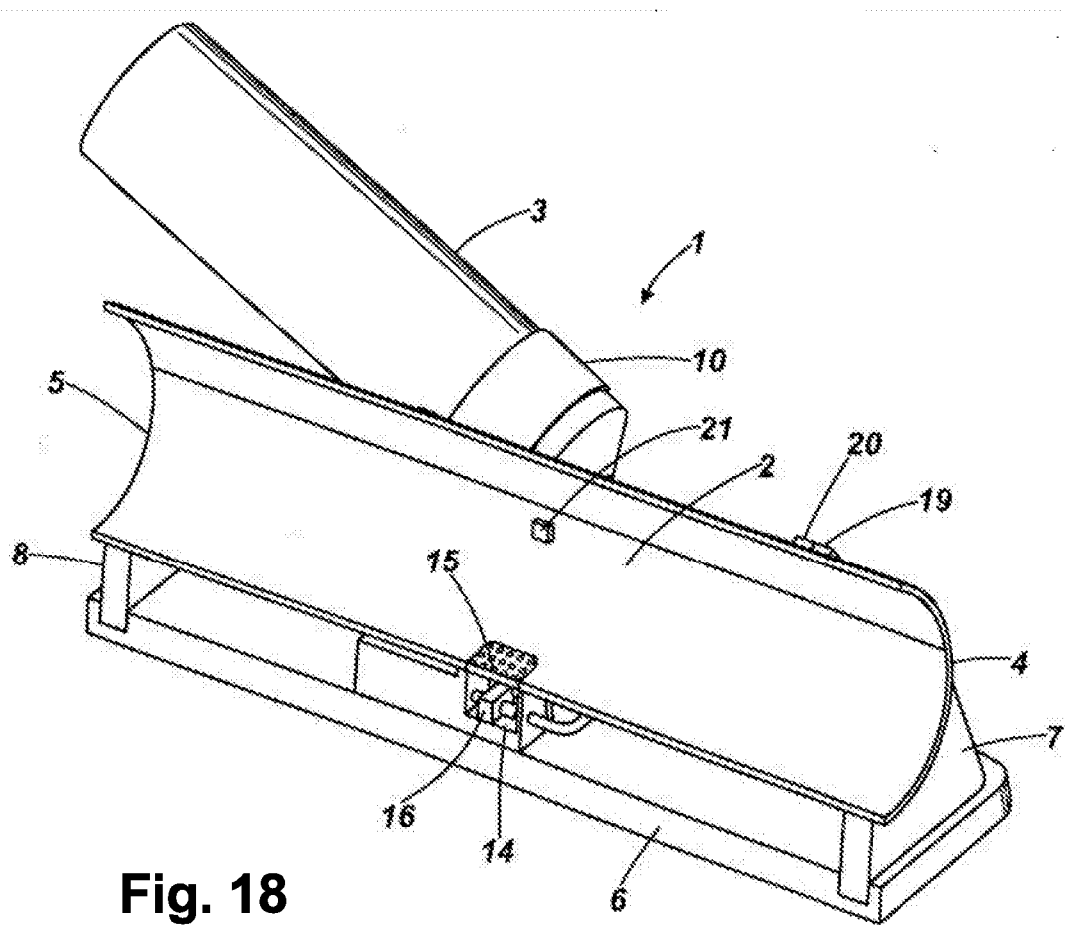


Fig. 18

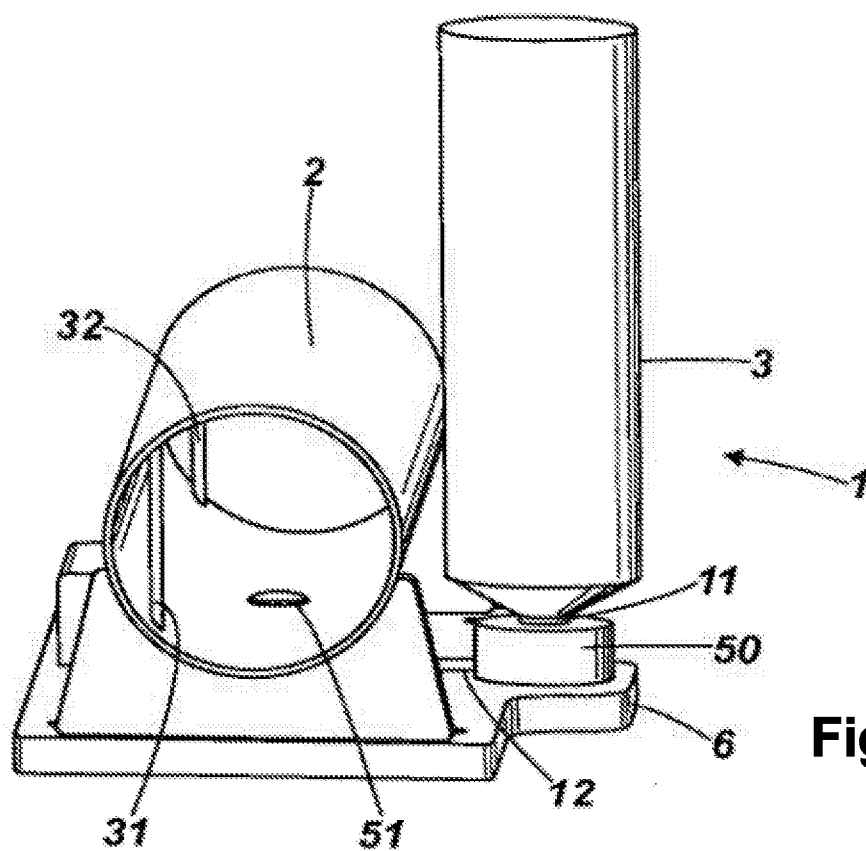


Fig. 19

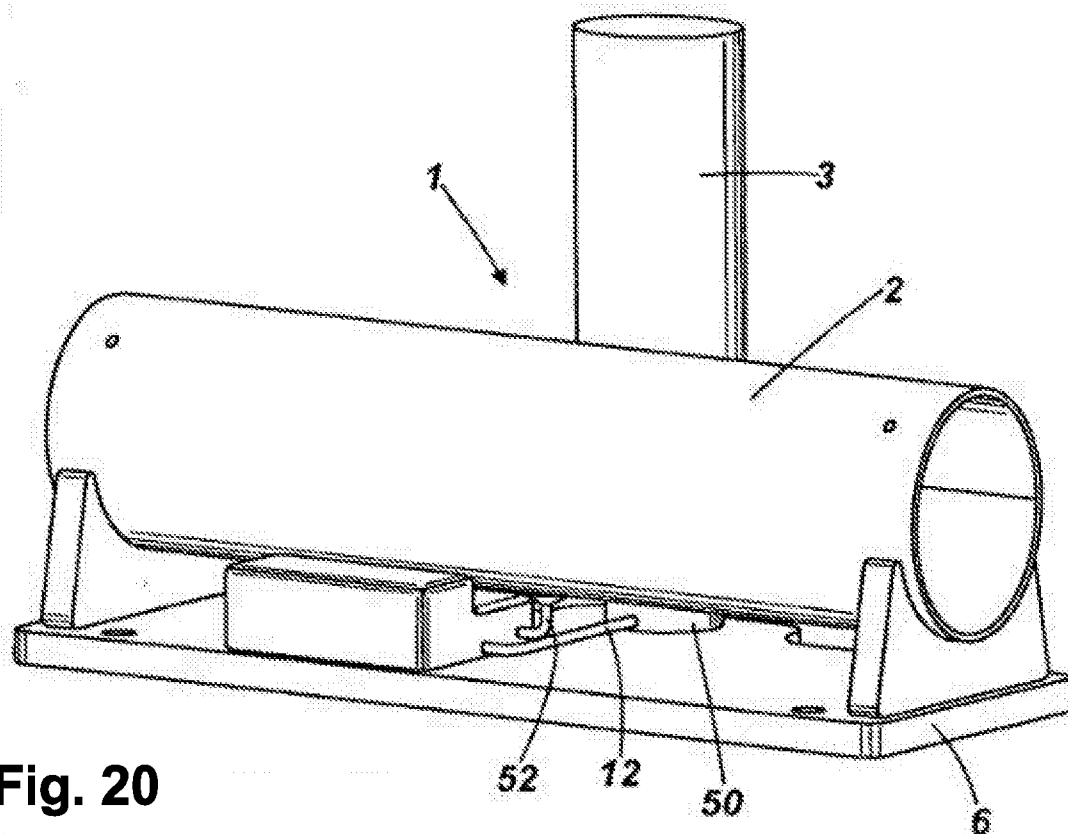


Fig. 20

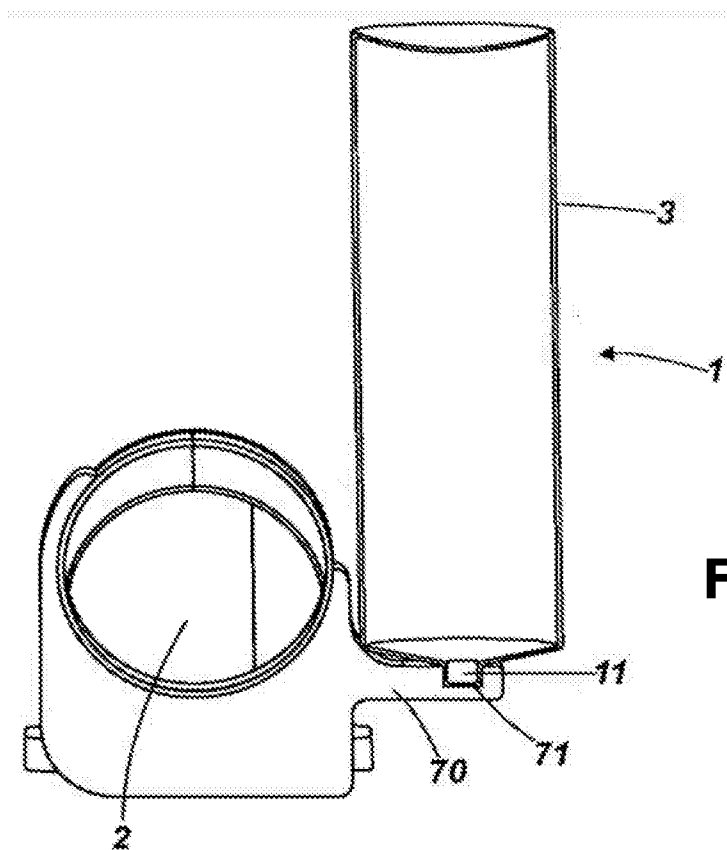


Fig. 21

Fig. 22

