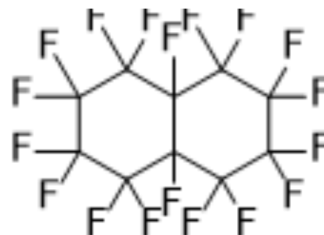


## Perfluorodecalin

Cat. No.:	HY-108298		
CAS No.:	306-94-5		
Molecular Formula:	C <sub>10</sub> F <sub>18</sub>		
Molecular Weight:	462.08		
Target:	Others		
Pathway:	Others		
Storage:	Pure form	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (216.41 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1641 mL	10.8206 mL	21.6413 mL
	5 mM	0.4328 mL	2.1641 mL	4.3283 mL
	10 mM	0.2164 mL	1.0821 mL	2.1641 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Perfluorodecalin liquids are largely used in vitreoretinal surgery. Perfluorodecalin with tamponade lasting more than two days is detrimental to the retina in the case of rabbit. Perfluorodecalin can be used for the research of giant retinal tears<sup>[1][2]</sup>. Perfluorodecalin is a non-toxic, non-flammable, thermally stable, non-bio-accumulating O<sub>2</sub>-carrier and used as artificial blood<sup>[3]</sup>. Perfluorodecalin enhances bone regeneration and cell viability<sup>[4][5]</sup>.

#### In Vitro

Perfluorodecalin prolongs the cells survival in anaerobic environment, enhances the radiopacity, injectability, cohesion of bone cements and the bone regeneration<sup>[4]</sup>. Perfluorodecalin (10% v/v) ameliorates hypoxia and increases cell viability in transplantation of encapsulated islets<sup>[5]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay<sup>[5]</sup>

Cell Line: BM cells

Concentration:

	Incubation Time:	21 days
	Result:	Increased number of BM cells.
	RT-PCR <sup>[5]</sup>	
	Cell Line:	islets
	Concentration:	10% v/v
	Incubation Time:	
	Result:	Decreased HIF-1 $\alpha$ expression and increased VEGF expression.
<b>In Vivo</b>	Perfluorodecalin (1.1-1.5 ml/eye) induces inflammation and retinal damage in albino rabbits <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Albino rabbits <sup>[2]</sup>
	Dosage:	1.1-1.5 ml for each eye
	Administration:	injection into vitreous cavity
	Result:	Induced appearance of foam cells, preretinal membranes, and the interface necrosis.

## REFERENCES

- [1]. Spahn DR. Blood substitutes. Artificial oxygen carriers: perfluorocarbon emulsions. Crit Care. 1999;3(5):R93-7.
- [2]. Tamimi F, et al., Perfluorodecalin and bone regeneration. Eur Cell Mater. 2013 Jan 2;25:22-36.
- [3]. Rodriguez-Brotons A, et al., Comparison of Perfluorodecalin and HEMOXCell as Oxygen Carriers for Islet Oxygenation in an In Vitro Model of Encapsulation. Tissue Eng Part A. 2016 Dec;22(23-24):1327-1336.
- [4]. Orzalesi N, et al. Experimental short-term tolerance to perfluorodecalin in the rabbit eye: a histopathological study. Curr Eye Res. 1998;17(8):828-835.
- [5]. Bourke RD, et al. Experimental long-term vitreous replacement with purified and nonpurified perfluorodecalin. Am J Ophthalmol. 1994;118(3):403-404.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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