

Abstract

The pharmaceutical industry faces increasing pressure to develop safe, efective, and cost-ef cient medications in a timely manner. To meet these demands, researchers and manufacturers rely on robust methodologies such as Design of Experiments (DoE) to optimize formulation, manufacturing processes, and analytical methods. This abstract provides an overview of the role of DoE in pharmaceutical development, highlighting its applications and benefits. By systematically varying mul©y

K

K		K		'
·, · · · · · · · · · ·		· · · · ·		1 .
. , . , . , . , . D	E			
	· · · · · · · · · · · · · · · · · · ·		· · · · · · ·	÷ .,
i service de la del	and a second	-,, •	* 1 = 1 = 1	,) - /
- , ,	· · · · · ·	·-·) -	· · · · ·	
· · · · · · · · · · · · · · · · · · ·	, D. ,	, E ,	(D E). D	Е,
		,	••••••••••	
- / / • -	••••••		.,, ,	
· · · · · · · · · · · · · · · · · · ·	· · · · ·			· · . , ,
· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · ·		• •

Ι	D.,	, E ,			. /	1.1.1
, ,		· . , · ·			.,	
	× .	• • • • • • • •	1	$2 \cdot A$,D E	- /
		· · · · · .	· · · · · · · · ·	,		
		. B		· · · / · /	, * *	1
	,	, D E				
·		· · · ,) · · · · ·	,- · ·	·, · -	3.	
Α	K		K		K	
1	F	K			1	, D E

		K K	:	· · · · · ·	• • • • • • • • •	
•••••	DE	(. ,		•	1	· · · · · · · ·
· · · ·	.,,	,	· · · · ·		. В	· · ·
					· · · · / / · · · · · · ·	·
, * *)		, -	×	• • • • • • • • •		
• . • .		/		6.		

*Corresponding author: Cheery Mark, Department of Pharmacology, University Auckland, New Zealand, E-mail: cherrymark@auckland.ac.nz

Received: 01-Apr-2024, Manuscript No: jpet-24-131975, **Editor assigned:** 03-Apr-2024, Pre QC No: jpet-24-131975(PQ), **Reviewed:** 22-Apr-2024, QC No: jpet-24-131975, **Revised:** 23-Apr-2024, Manuscript No: jpet-24-131975(R), **Published:** 29-Apr-2024, DOI: 10.4172/jpet.1000232

Citation: Cheery M (2024) Enhancing Pharmaceutical Development through Design of Experiments . J Pharmacokinet Exp Ther 8: 232.

Copyright: © 2024 Cheery M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

References

- 1. Suman JD (2003) Nasal drug delivery. Expert Opin Biol Ther 3: 519-523.
- Grassin Delyle S, Buenestado A, Naline E, Faisy C, Blouquit-Laye S, et al. (2012) Intranasal drug delivery: an ef cient and non-invasive route for systemic administration: focus on opioids. Pharmacol Ther 134: 366-379.
- Campbell C, Morimoto BH, Nenciu D, Fox AW (2012) Drug development of intranasally delivered peptides. Ther Deliv 3: 557-568.
- Thorne R, Pronk G, Padmanabhan V, Frey W (2004) Delivery of insulin-like growth factor-I to the rat brain and spinal cord along olfactory and trigeminal pathways following intranasal administration. Neuroscience 127: 481-496.
- Dhuria SV, Hanson LR, Frey WH (2010) Intranasal delivery to the central nervous system: mechanisms and experimental considerations. J Pharm Sci 99: 1654-1673.

- Alam MI, Baboota S, Ahuja A, Ali M, Ali J, et al. (2012) Intranasal administration of nanostructured lipid carriers containing CNS acting drug: pharmacodynamic studies and estimation in blood and brain. J Psychiatr Res 46: 1133-1138.
- Muller RH, Shegokar R, Keck CM (2011) 20 years of lipid nanoparticles (SLN & NLC): present state of development & industrial applications. Curr Drug Discov Technol 8: 207-227.
- Silva AC, Amaral MH, Sousa Lobo J, Lopes CM (2015) Lipid nanoparticles for the delivery of biopharmaceuticals. Curr Pharm Biotechnol 16: 291-302.
- Wicki A, Witzigmann D, Balasubramanian V, Huwyler J (2015) Nanomedicine in cancer therapy: challenges, opportunities, and clinical applications. J Control Release 200: 138-157.
- Beloqui A, Solinís MÁ, Rodríguez-Gascón A, Almeida AJ, Préat V (2016) Nanostructured lipid carriers: promising drug delivery systems for future clinics. Nanomed Nanotechnol Biol Med 12: 143-161.