

Ocular delivery

María Lina FORMICA



INTEGRATING
Delivery Science
ACROSS DISCIPLINES



Poster No. 1176

Novel acetazolamide-loaded nanostructured lipid carriers for ocular applications

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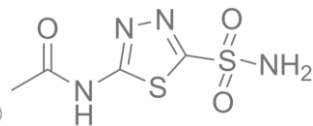
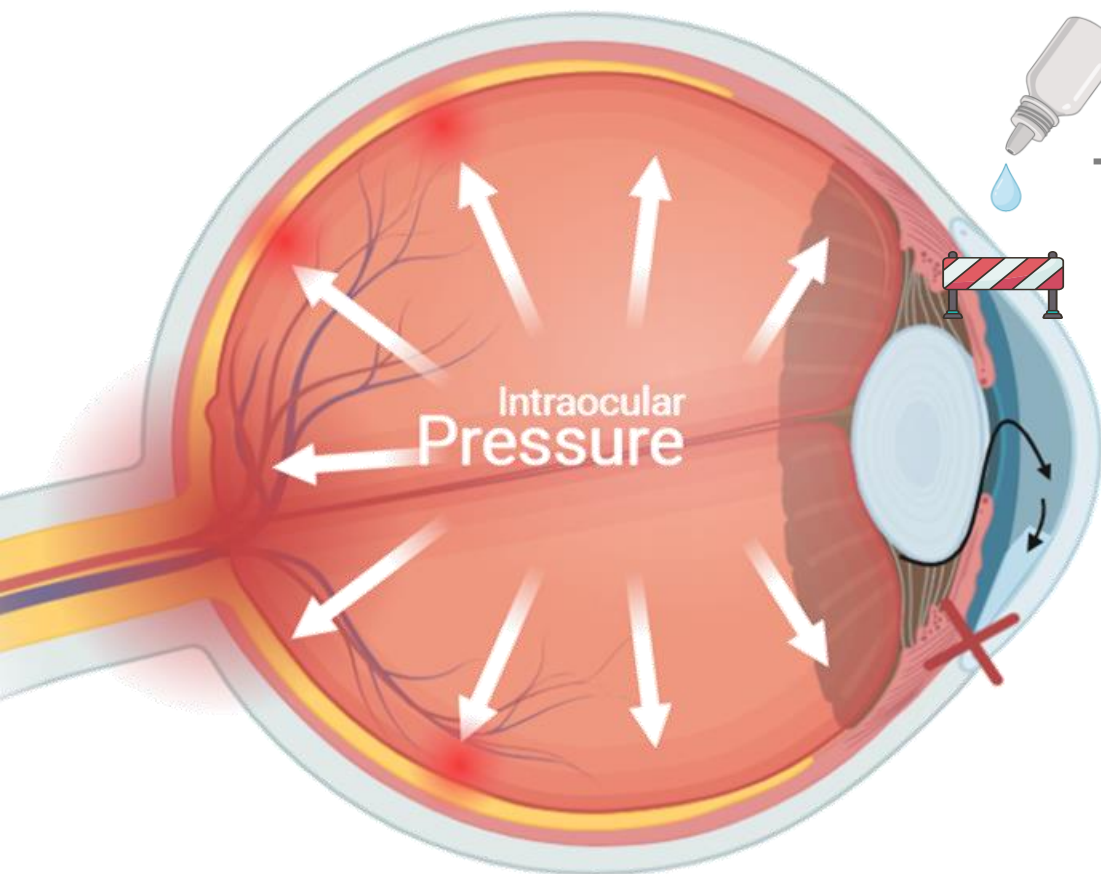
Control ID: **4117810**



Glaucoma

76 million 

- chronic
- progressive
- neurodegenerative



Acetazolamide

- poor ocular bioavailability
- large oral doses
- systemic side effects

Acetazolamide-loaded nanostructured lipid carriers

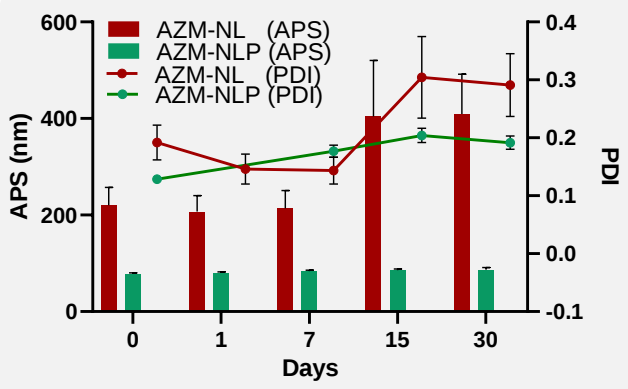


Novel: AZM-NLP

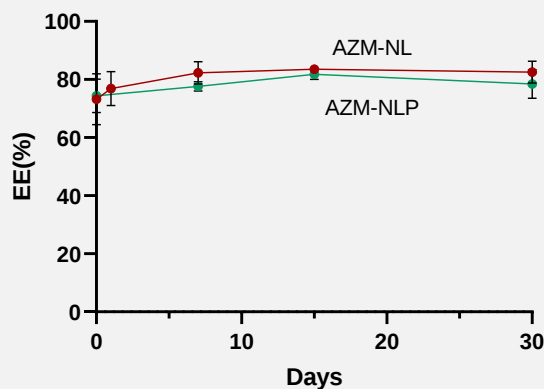
Results

Novel AZM-NLP In vitro characterization

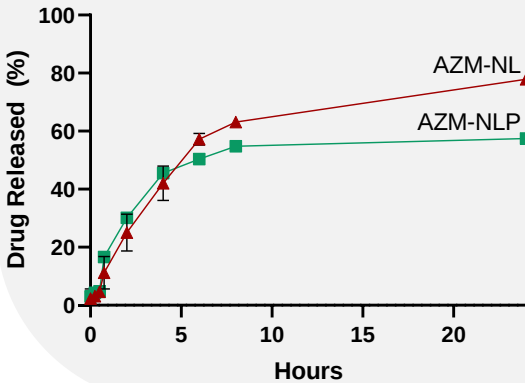
A- Average Particle Size (APS) and Polydispersity Index (PDI)



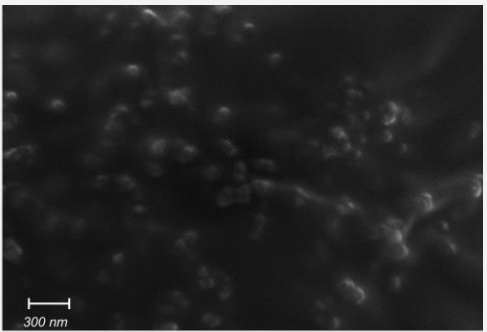
B- Encapsulation Efficiency (EE)



C- Drug release

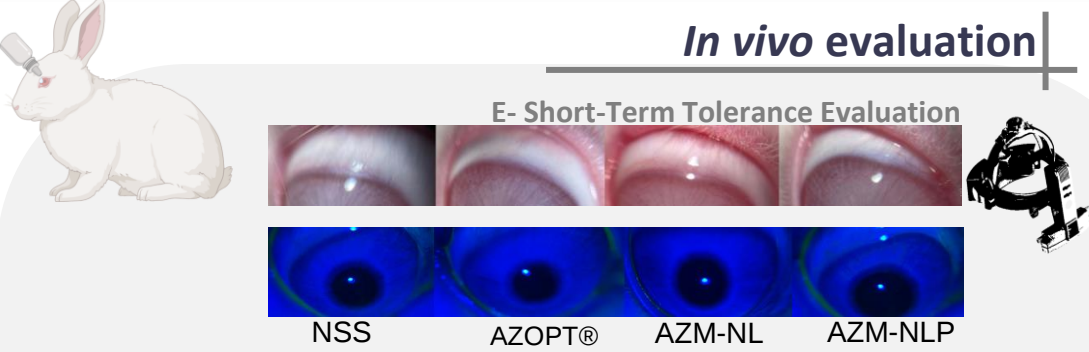


D- Morphological analysis by SEM

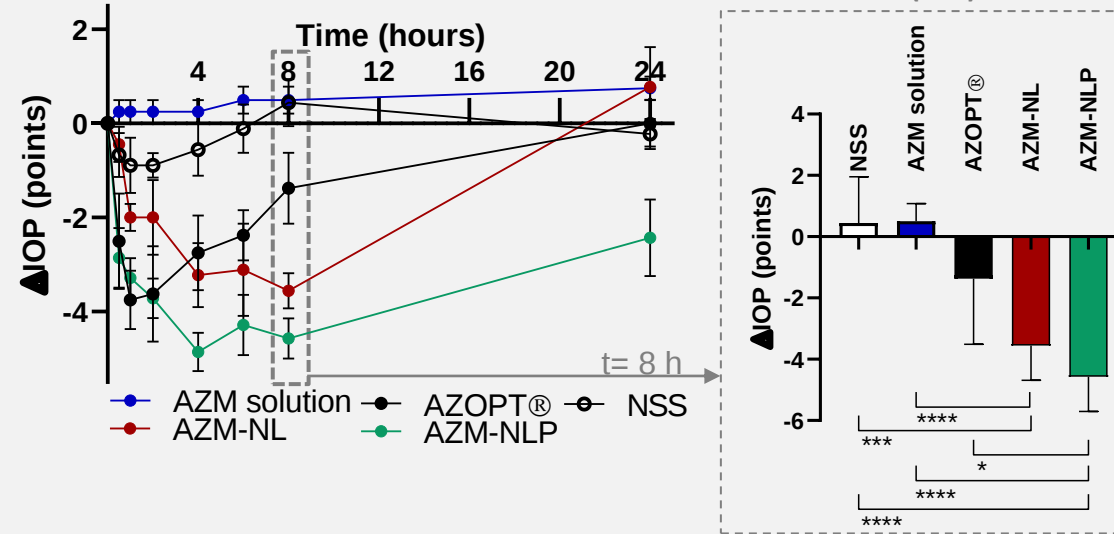


In vivo evaluation

E- Short-Term Tolerance Evaluation



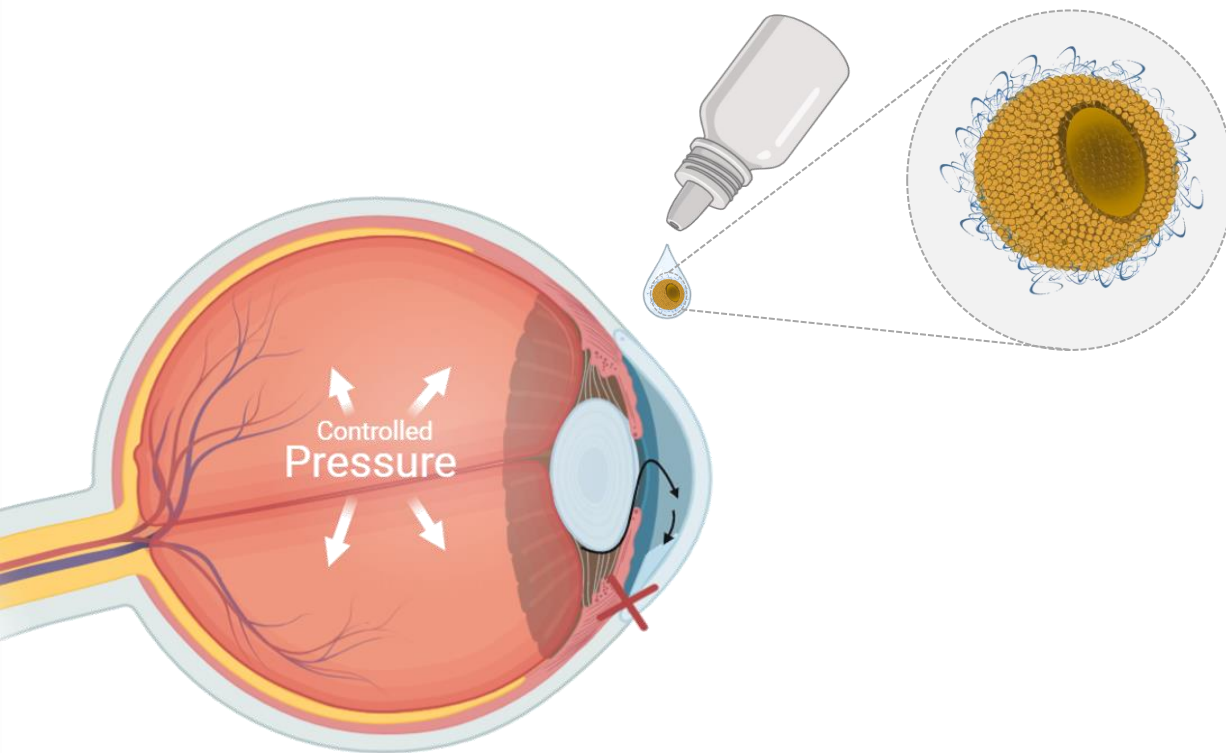
F- Intraocular Pressure (IOP) decrease



ANOVA analysis: *p < 0.05; ***p < 0.0001; ****p < 0.0001

	NSS	AZM solution	AZOPT®	AZM-NL	AZM-NLP
AUC	-0.85 ± 8.73	12.69 ± 6.27	-32.13 ± 17.97	-43.17 ± 10.14	-88.32 ± 19.74
t max (h)	1	24	1	8	4
Δ IOP max (points)	-0.89 ± 1.06	0.75 ± 0.5	-3.75 ± 1.75	-3.56 ± 1.13	-4.86 ± 1.07

Conclusions



- *Nanometric*
- *Short-term stable*
- *Short-term tolerable*
- *Ocular hypotensive effect*
- *Lower topical drug doses*

Thanks!

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