Supplementary material 1 – Query lines used in literature survey in each database.

Database	**Query line**
Embase	(('ungual':ab,ti OR 'toenail*':ab,ti OR 'fingernail*':ab,ti OR 'onychomycosis':ab,ti OR 'mychosis nail':ab,ti OR 'nail mychosis':ab,ti OR 'nail fungal infection':ab,ti OR 'onychomychoses':ab,ti OR 'tinea unguium':ab,ti OR 'tinia unguium':ab,ti OR 'nail':ab,ti) AND 'psoriasis':ab,ti OR 'nail disease*':ab,ti OR 'nail disorder*':ab,ti OR 'onychopathy':ab,ti OR 'nail anomaly':ab,ti OR 'nail deformity'/exp OR 'nail deformity') AND ('nano*':ab,ti OR 'nanostructure*':ab,ti OR 'nanustructured drug delivery system*':ab,ti OR 'nanocapsule*':ab,ti OR 'nanoemulsion':ab,ti OR 'nano emulsion':ab,ti OR 'nano-emulsion':ab,ti OR 'nanogel':ab,ti OR 'solid lipid nanoparticle*':ab,ti OR 'nanostructured lipid carrier*':ab,ti OR 'liposome*':ab,ti OR 'phospholipid bilayer vesicle*':ab,ti)
Wed of Science	TI=(ungual OR toenail* OR fingernail* OR onychomycosis OR mychosis, nail OR nail mychosis OR nail fungal infection OR onychomychoses OR tinea unguium OR tinia unguium OR nail psoriasis OR nail disease* OR nail disorder* OR onychopathy OR nail anomaly OR nail deformity) AND TI=(nano* OR nanostructure* OR nanustructured drug delivery system* OR nanocapsule* OR nanoemulsion OR nano emulsion OR nano-emulsion OR nanogel OR solid lipid nanoparticle* OR nanostructured lipid carrier* OR liposome* OR phospholipid bilayer vesicle*)
Scopus	TITLE-ABS-KEY("ungual" OR "toenail*" OR "fingernail*" OR "onychomycosis" OR "mychosis, nail" OR "nail mychosis" OR "nail fungal infection" OR "onychomychoses" OR "tinea unguium" OR "tinia unguium" OR "nail psoriasis" OR "nail disease*" OR "nail disorder*" OR "onychopathy" OR "nail anomaly" OR "nail deformity") AND TITLE-ABS-KEY("nano*" OR "nanostructure*" OR "nanustructured drug delivery system*" OR "nanocapsule*" OR "nanoemulsion" OR "nano emulsion" OR "nano-emulsion" OR "nanogel" OR "solid lipid nanoparticle*" OR "nanostructured lipid carrier*" OR "liposome*" OR "phospholipid bilayer vesicle*")
Espacenet	(ta all "ungual" OR ta all "nail*" OR ta all "onychomycosis" OR ta all "nail psoriasis") AND (ta all "nano*" OR ta all "nanostructure*" OR ta all "nanosystem*")

Supplementary material 2 - Composition and particle size of vesicular systems designed for ungual administration.

Reference	Composition	Particle size (nm)
[1]	*Spanlastic nanovesicles* Eficonazole Ethanol Tween 80 Deoxycholate Span 60 or Span 65 Water	197
[2]	*Penetration enhancer containing vesicles* Ce6 L-alpha-phosphatidilcholine N-acetyl-L-cysteine Chloroform CTAB	264.29

	Phosphate buffer	
	Transcutol	
	Ethanol	
	Methanol	
	Water	
[3]	*Penetration enhancer containing vesicles*	193.55 – 252.5
	Itraconazole	
	N-acetyl-L-cysteine	
	Labrasol	
	Sterylamine	
	Chloroform	
	Metanol	
	Phosphate buffer	

[4]	*Liposomes* Caffeine Lipoid S 100 / Phospholipon 90 G Cholesterol Chloroform PBS (pH: 7.4)	*Ethosomes* Caffeine Lipoid S 100 Cholesterol Chloroform Ethanol Water	*Liposomes:* 545.3 and 610.2 *Ethosomes:* 349.5 and 337.9
[5]	*Spanlastic nanovesicles* Terbinafine hydrochloride Span ® 60 (in ethanol) Span ® 65 (in acetone:chloroform 1:2(v/v)) Tween ® 80 / Sodium deoxycholate Water		762.4 and 438.45 (optimized)

[6]	*Penetration enhancer containing vesicles* Sertaconazole Phosphatidylcholine Transcutol P Stearylamine N-acetyl-L-cysteine / thioglycolic acid / thiourea Chloroform:methanol 2:1 (v/v) PBS (pH 7.4) / PBS (pH 7.4) + ethanol		66.5 (optimized)
[7,8]	*Liposomes* Terbinafine hydrochloride Lipoid S 100 / Phospholipon 90 G Cholesterol Chloroform PBS (pH: 7,4)	*Ethosomes* Terbinafine hydrochloride Lipoid S 100 / Phospholipon 90 G Ethanol Water	*Liposomes*: 355.65 and 623.8 *Ethosomes* 188.5 and 225.3

[9]	*Transfersomes* Terbinafine hydrochloride Phospholipids Sodium cholesteryl sulfate Tween 80 Ethanol PBS	69.6

Supplementary material 3 - Composition and particle size of microemulsions designed for ungual administration.

Reference	Composition	Particle size (nm)
[10]	Terbinafine Oleic acid Labrasol Transcutol P Water	18.14
[11]	Itraconazole Oleic acid Isopropyl myristate Labrasol Transcutol P Water	48.2
[12]	Ciclopirox olamine Capmul PG8 Cremophor EL	25.8

	Transcutol P Water	
[13]	Terbinafine hydrochloride	22.15
	Capmul MCM Cremophor EL Transcutol P Water	
[14]	Ketoconazole	321.4
	Capryol Nigella oil Transcutol Propylene glycol Water	

Supplementary material 4 - Composition and particle size of nanoemulsions designed for ungual administration.

Reference	Composition	Particle size (nm)
[15]	AlClPc (in ethanolic solution) Cremophor ELP Castor oil PBS (pH=6,8)	30.4
[16]	Ketoconazole Labrafac™ Lipophile WL 1349 Tween 80 PEG 400 Water	127 a 63.5
[17]	Tea Tree Oil Span 80 Tween 80 Water	160

[18]	Ciclopirox olamine Oleic acid Tween 80 PEG 400 Water	25.51

Supplmentary material 5 - Composition and particle size of NLC designed for ungual administration.

Reference	Composition	Particle size (nm)
[19]	Voriconazole Glyceryl behenate Capric caprylic triglycerides Polysorbate 80 Sorbitan trioleate Cetylpyridinium chloride Urea Water	230
[20]	Ketoconazole Ucuuba fat TPGS 1000 Capryol™90 Water	33.6 and 74,6
[21]	Terbinafine	426.3 and 450.8 nm

	Glyceryl Monostearate
	Ethanol
	Tween 80
	Water

Supplementary material 6 - Composition and particle size of NPs designed for ungual administration.

Reference	Composition	Particle size (nm)
[22]	Terbinafine HCl Lecithin Tween 80 Chitosan Ethanol Acetic Acid Water	229
[23]	Itraconazole Difluorated Curcumin DMSO Sodium Tripolyphosphate Sodium Hydroxide Tween 20	207.2

	Chitosan Acetic Acid Water	
[24]	Terbinafine Dichloromethane Eudragit RSPO Ethilcellulose Polyvinyl Alcohol Water	108.7
[25]	Nile Red Octyl methoxycinnamate 5,10,15,20-tetrakis- (4-aminophenyl)porphyrin Acetone Poly-ε-caprolactone	

Tween 85
Water

Supplementary material 7 - Composition and particle size of nanocapsules designed for ungual administration.

Reference	Composition	Particle size (nm)
[26]	Ciclopirox Maisine Acetone Lipoid S75 poly(lactic-co-glycolic acid) Span 60 Tween 20 Water	174.77
[27,28]	Tioconazole Poly-ε-caprolactone MCT Acetone Lipoid®S75 (in ethanolic solution)	155/157 (neutral) 162/166 (cationic, with chitosan coating)

	Polysorbate 80 Water	
[17]	Chitosan Tea Tree Oil Poly-ε-caprolactone Acetone Span 80 Tween 80 Water	220

Supplementary material 8 – Preparation technique and particle size of mettalic nanoparticles designed for ungual administration.

Reference	System	Preparation technique	Particle size (nm)
[29]	AgNPs	Biosynthesis using *Cladosporium cladosporioides*	5 – 50
[30]	ZnONPs	Biosynthesis using *Rosa indica*	50
[31]	AuNPs	Turkevich-Frens method	15

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