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**Potential and future scope of nanoemulgel formulation for topical delivery of lipophilic drugs** (Review)
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## Abstract

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The Nanoemulgel drug delivery system is a formulation related intervention to improve the systemic delivery and therapeutic profile of lipophilic drugs. Nanoemulgel is an amalgamated formulation of two different systems in which nanoemulsion containing drug is incorporated into a gel base. The fusion of the two systems makes this formulation advantageous in several ways. Lipophilic drugs can be easily incorporated and the skin permeability of the incorporated drugs can be enhanced in several folds due to the finely distributed droplets of nanoemulsion phase. As a result, the pharmacokinetic and pharmacodynamic profiles of the lipophilic drugs are improved significantly. An increasing trend in topical nanoemulgel use in recent years has been noticed because of the better acceptability of the preparation to the patients due to their noninvasive delivery, avoidance of gastrointestinal side effects, easier applicability and good therapeutic and safety profile. Despite of having few limitations, nanoemulgel formulation can be considered as a potential and promising candidates for topical delivery of lipophilic drugs in the future. The aim of this review is to evaluate and report the current potential and future scope of nanoemulgel formulation for becoming an effective delivery system for poorly water soluble drugs. In this review, we have summarized and discussed the outcome of different studies on permeability, pharmacokinetic, pharmacodynamic and safety profile of the drugs delivered topically through nanoemulgel. Rationality of use along with the major challenges to overcome for nanoemulgel formulation has been discussed. © 2017 Elsevier B.V.

## Author keywords

[Lipophilic drugs](#)
[Nanoemulgel](#)
[Pharmacodynamics](#)
[Pharmacokinetics](#)
[Topical delivery](#)

## Indexed keywords

EMTREE drug terms:

[aceclofenac](#)
[alcohol](#)
[amphotericin B](#)
[antioxidant](#)
[betamethasone dipropionate](#)
[capsaicin](#)
[carvedilol](#)
[curcumin](#)
[cyclosporin](#)
[emulsifying agent](#)
[flurbiprofen](#)
[gelling agent](#)
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EMTREE medical terms:

[area under the curve](#)
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## Chemicals and CAS Registry Numbers:

aceclofenac, 89796-99-6; alcohol, 64-17-5; amphotericin B, 1397-89-3, 30652-87-0; betamethasone dipropionate, 5593-20-4; capsaicin, 404-86-4; carvedilol, 72956-09-3; curcumin, 458-37-7; cyclosporin, 79217-60-0; flurbiprofen, 5104-49-4; glibenclamide, 10238-21-8; ketoconazole, 65277-42-1; ketoprofen, 22071-15-4, 57495-14-4; leflunomide, 75706-12-6; meloxicam, 71125-38-7; oleic acid, 112-80-1, 115-06-0; piroxicam, 36322-90-4; polysorbate 80, 8050-83-7, 9005-65-6; ropinirole, 91374-21-9; tacrolimus, 104987-11-3; telmisartan, 144701-48-4; water, 7732-18-5; lipid, 66455-18-3;

Emulsions; Lipids

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