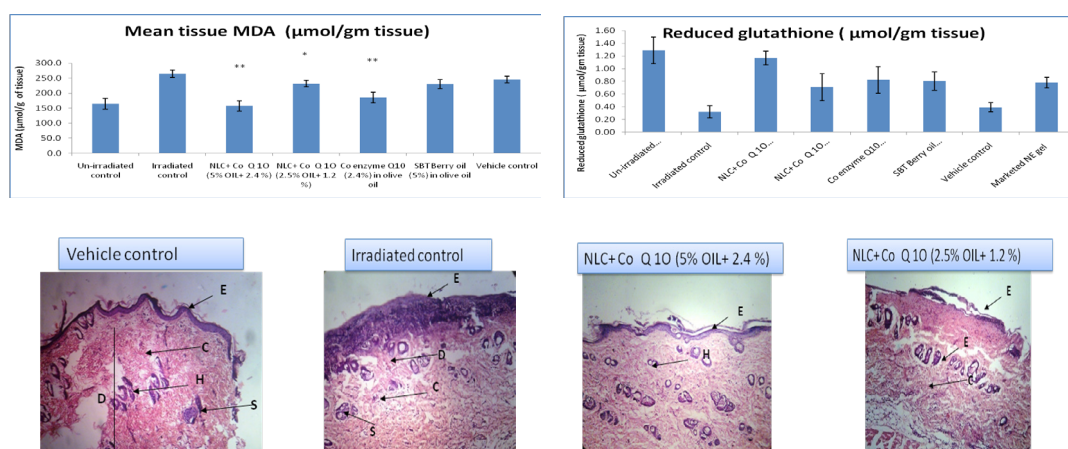


## Seabuckthorn berry oil and co-enzyme Q-10: A supplement duo against photoaging

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During the past decades there has been wide interest in exploring new techniques to deliver actives through skin and into skin for treatment of diseases topically and systemically. Recent research efforts in lipid based nanocarriers have led to the development of specialized nanosystems that are able to encapsulate active ingredients mainly antioxidants (AOs), to interact with the skin strata and to slowly release their content. The nanosystem matrix plays an important role in the kind of interaction with the stratum corneum, in particular natural lipids are characterized by high dermophilicity and hydration power. Co-enzyme Q<sub>10</sub> (CoQ<sub>10</sub>) was standardized using UV spectrophotometry, FT-IR and DSC. Purity was confirmed by HPLC. CoQ<sub>10</sub> is a water insoluble endogenous antioxidant which has shown anti-photoaging potential. SBT berry oil in combination with CoQ<sub>10</sub> was formulated as microemulsion and nanostructured lipid carrier based gels. Further, these formulations were compared for physicochemical parameters such as *in vitro* occlusive properties, aesthetic attributes, *in vitro* antioxidant activity with conventional marketed cream. The developed formulations were characterized for particle size (30.51±2.4 (0.252±0.054), 57.24±5.4, (0.082±0.065) and 5,890±606.89 nm respectively), polydispersity index (PI), spreadability and pH. Further, comparative *in vitro* skin permeation and deposition studies (by tape stripping method) across pig ear skin (4.390 and 6.874 µg/cm<sup>2</sup> respectively after 48 hr) and primary skin irritation studies were conducted. The developed formulations were assessed for *in vitro* and *in vivo* photoprotection against UV B in rats. The results indicate that the NLC based gels showed significant difference in the lowering the oxidative stress induced by UV rays in rat skin at various drug concentrations (2.4% and 1.2 % w/w) and also exhibited improved anti-inflammatory action by reducing epidermal thickening and abrasion when studied histopathologically.



### Biography

Namrata Kadwadkar completed her master in Pharmacognosy and Phytochemistry from Bombay College of Pharmacy. She is currently pursuing her Ph.D in Pharmaceutics at Institute of Chemical Technology. Her interest lies in the extraction of herbals and their formulation. She has one research letter published in Pharmacognosy Communications. She has been an active participant at Biocamp 2013. She also bagged in 2<sup>nd</sup> place in poster competition at SAC-ACCP, Worli.