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(72)**Name of Inventor :**
1)**DR. VARSHA TIWARI**
Address of Applicant :PHARMACY ACADEMY, IFTM UNIVERSITY, LODHIPUR RAJPUT, MORADABAD, U.P. 244102 ----------- -----------
2)**DR. ABHISHEK TIWARI**
Address of Applicant :PHARMACY ACADEMY, IFTM UNIVERSITY, LODHIPUR RAJPUT, MORADABAD, U.P. 244102 ----------- -----------
3)**DR. PRABHAT KUMAR UPADHYAY**
Address of Applicant :INSTITUTE OF PHARMACEUTICAL RESEARCH, GLA UNIVERSITY, MATHURA, UTTAR PRADESH, INDIA ----------- -----------
4)**DR. MANISH KUMAR**
Address of Applicant :MM COLLEGE OF PHARMACY, MAHARISHI MARKANDESHWAR (DEEMED TO BE UNIVERSITY), AMBALA, INDIA ----------- -----------
5)**DR. SURESH KUMAR**
Address of Applicant :BHARAT INSTITUTE OF PHARMACY, PEHLADPUR, BABAIN, KURUKSHETRA, HARYANA, INDIA ----------- -----------
6)**MRS. RENU SAHARAN**
Address of Applicant :MAHARISHI MARKANDESHWAR (DEEMED TO BE UNIVERSITY), MULLANA, AMBALA, HARYANA, 133207, INDIA ----------- -----------
7)**DR. NAVNEET VERMA**
Address of Applicant :PHARMACY ACADEMY, IFTM UNIVERSITY, MORADABAD, UTTAR PRADESH, INDIA. ----------- -----------
8)**DR. SUNIL SINGH**
Address of Applicant :DEPARTMENT OF PHARMACEUTICAL CHEMISTRY, SHRI SAI COLLEGE OF PHARMACY, HANDIA, PRAYAGRAJ, UTTAR PRADESH, INDIA ----------- -----------
9)**MS. NIKITA KAUSHAL**
Address of Applicant :MM COLLEGE OF PHARMACY, MAHARSHI MARKANDESHWAR (DEEMED TO UNIVERSITY), MULLANA, AMBALA ----------- -----------
10)**DR. CHANDRA SHEKHAR SHARMA**
Address of Applicant :B N COLLEGE OF PHARMACY, FACULTY OF PHARMACY, B N UNIVERSITY, UDAIPUR ----------- -----------
11)**DR. VIPIN SAINI**
Address of Applicant :MAHARISHI MARKANDESHWAR (DEEMED TO BE UNIVERSITY), MULLANA, AMBALA, HARYANA 133207 ----------- -----------
12)**DR. ANAND PODDAR**
Address of Applicant :PODDAR INTERNATIONAL COLLEGE, SECTOR-7, NEAR SJIPRA PATH, MANSAROVAR, JAIPUR-302020 ----------- -----------

(57) Abstract :
The endeavor of present research is to formulation and development of Curcumin loaded nano-emulgel (NEG's) formulations together with its evaluation for anti-oxidant potential. Curcumin loaded NEG's has been formulated using curcumin and polymers, i.e. carbopol 934, methyl paraben, propyl paraben, propylene glycol, tween 80, linseed oil and vitamin E in different ratio as antioxidant, emulsifier, preservative based on solubility and emulsification potentiality. NEG's has been formulated by blending two separate phases; aqueous phase (tween 80) and non-aqueous phase (propylene glycol, methyl and propyl paraben, flax seed oil and vitamin E) at 700c using high speed homogenization technique. Five formulations have been formulated and characterized by various parameters i.e. physical examination, pH measurement, viscosity, spreadibility, extrudability, Particle size, Zeta potential, anti-oxidant(in-vitro), permeation studies, IR and DSC analysis. NEG's were formulated using curcumin, vit. E, flax seed oil, emulsifiers as well as preservatives and results were excellent and reproducible. All formulations were analyzed for skin permeability through using Franz diffusion cell. Five poly-herbal nano-NEG's formulations have been developed and characterized, among them F3 formulation showing excellent results with zeta potential (29.2), particle size (890.3nm) and sharp peak (83.330c) DSC analysis. F3 formulation also showing excellent anti-oxidant potential with IC50 value of 2.17 and was comparable with that of standard (1.23±2.14) respectively. Curcumin based nano-NEG's have been formulated and characterized showed excellent anti-oxidant potential and found to be stable as indicated by zeta potential with particle size (890.3nm). This formulation showed excellent results can be used for cosmetic purposes.

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