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(71)**Name of Applicant :**
1)Dr. Prashant Vishnu Ajmire
Address of Applicant :Professor, Dr. Rajendra Gode Institute of Pharmacy, University-Mardi Road, Amravati, -444602 Maharashtra, India Maharashtra India
2)Rajiv Yadav
3)Dr. Anish
4)Dr. Arvind Kumar
5)Shivprasad Sanjay Dhage
6)Dr Mahesh Kumar Gupta
7)Ms Swati Sharma
8)Dr. Ruchi Jain
9)Dr Nirmala Devi
10)B. Rajgopal
11)Dr Sarita Karole
(72)**Name of Inventor :**
1)Dr. Prashant Vishnu Ajmire
2)Rajiv Yadav
3)Dr. Anish
4)Dr. Arvind Kumar
5)Shivprasad Sanjay Dhage
6)Dr Mahesh Kumar Gupta
7)Ms Swati Sharma
8)Dr. Ruchi Jain
9)Dr Nirmala Devi
10)B. Rajgopal
11)Dr Sarita Karole

(57) Abstract :
ABSTRACT TITLE: PROTECTIVE EFFECTS OF RESVERATROL AGAINST CIGARETTE SMOKE–INDUCED OXIDATIVE-STRESS AND INFLAMMATION IN LUNG EPITHELIAL CELLS The present invention relates to pharmaceutical compositions comprising resveratrol and methods for protecting lung epithelial cells against cigarette smoke-induced oxidative stress and inflammation. The invention provides a therapeutic approach targeting oxidative stress through direct reactive oxygen species scavenging, enhancement of antioxidant enzyme activities including superoxide dismutase, catalase, and glutathione peroxidase, and restoration of cellular glutathione levels. The anti-inflammatory effects are mediated through inhibition of nuclear factor kappa B signaling pathway, preventing nuclear translocation of the p65 subunit and reducing pr oduction of pro-inflammatory cytokines including interleukin-8 and tumor necrosis factor-alpha. Resveratrol at concentrations of 10 to 50 micromolar provides significant protection against cigarette smoke extract-induced cytotoxicity, reducing reactive oxygen species by over 60 percent and inflammatory cytokines by over 50 percent.

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