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(51) International classification	:G06F 16/3329, G11B 7/128, A61C 5/90, A61J 3/07, H03C 1/50 :NA	(71)Name of Applicant : 1)Pravin Badhe Address of Applicant :Flat No 708 Ragini C Durvankur Shrushti, Near JSPMS college Narhe Pune Maharashtra India
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(57) Abstract : Background: Oral squamous cell carcinoma (OSCC) is a common cancer often linked to tobacco, alcohol use, and chronic inflammation. While 5-fluorouracil (5-FU) is a standard chemotherapeutic, its use is limited by side effects like toxicity and muscle fatigue. Triticum aestivum (wheatgrass) is known for its antioxidant, anti-inflammatory, and chemopreventive effects. This study evaluated the therapeutic efficacy of Wheatgrass Pure Herb (WPH) in a DMBA-induced OSCC rat model and chemotherapy-related fatigue. Methods: A network pharmacology and molecular docking approach was used to identify bioactive compounds in WPH and their interactions with oral cancer-related targets. In vivo studies were conducted on Sprague-Dawley rats divided into five groups: control, disease, 5-FU, WPH, and WPH + 5-FU. Evaluations included biochemical markers (GSH, SOD, MDA), TNF- α levels, motor coordination via the rotarod test, and histopathological analysis of oral tissues to assess therapeutic outcomes and fatigue reduction. Results: Network analysis showed that WPH includes bioactive compounds targeting key cancer and inflammatory pathways like SRC, EGFR, and TNF. In vivo, WPH enhanced antioxidant enzymes, reduced lipid peroxidation, and lowered TNF- α levels. Rotarod tests indicated improved motor coordination. Histopathology revealed better epithelial structure and reduced dysplasia, especially in the WPH + 5-FU group, highlighting the combination's superior therapeutic effect. Conclusion: Triticum aestivum (wheatgrass) shows strong chemopreventive and anti-fatigue effects in OSCC management, especially when combined with 5-fluorouracil (5-FU). By modulating oxidative stress and inflammatory pathways, WPH acts as an effective adjuvant therapy, improving treatment outcomes and reducing chemotherapy-related side effects in integrative cancer management strategies. No. of Pages : 30 No. of Claims : 8		

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