(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2025
(21) Application No.202511095653 A
(43) Publication Date : 05/12/2025

(54) Title of the invention : A GENETICALLY MODIFIED MOSS FOR SUSTAINABLE PROTEIN PRODUCTION SYSTEMS

(51) International classification	:C12N0009220000, C12N0001200000, C12P0021020000, G06N0003126000, C12M0001000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a genetically modified moss system (101–106) designed for sustainable protein production. The system integrates CRISPR-Cas based genetic modification (101), controlled moss bioreactor cultivation (102), nutrient/light supply (103), protein expression pathways (104), harvesting (105), and purification (106). This eco-friendly platform enables scalable, efficient production of proteins with correct post-translational modifications, suitable for food, pharmaceutical, and industrial applications, while minimizing environmental impact.

No. of Pages : 14 No. of Claims : 6