

**OR-85****Globulin Endosperm-Specific Promoter For High-Level Expression of Gus Gene IN Rice**

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The world population is expected to rise by an addition of 2 billion by 2030 and rice consumers are projected to increase by 1.8% annually. Hence, rice production must be increased between 25-45% to match-up the growing population since it is a staple food to more than half of the world's population. The endosperm is a reliable tissue for the production of recombinant proteins over other tissues because it is more cost-effective, it is easier to scale-up agricultural yield, provides a larger storage ability and safe long-term storage. However only a few endosperm-specific promoters have been identified. The present research focused on the use of the *Avena sativa* strong endosperm-specific globulin (AsGpro) promoter (Accession number AY795082.1) for the expression of  $\beta$ -glucuronidase (GUS) in the endosperm of transgenic rice. Histochemical GUS<sup>Plus</sup> quantitative assays revealed that expression strength driven by the full length promoter region was 8 fold and 6 fold stronger than both rice actin and wheat high molecular weight glutenin promoters respectively. The AsGpro was up to 100 fold stronger than the CaMV35S constitutive promoter. The endosperm-specific globulin promoter can be used for the production of nutritional and pharmaceutical recombinant proteins using rice as a bioreactor which will help in alleviating the food crisis facing the world. Th

**Keywords:** Cloning, Endosperm-specific promoter, recombinant proteins, *Agrobacterium*-mediated transformation; histochemical assays.

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