

(A)

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Os01g0883800

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The rice *semidwarf-1* (*sd1*) is well known as the "green revolution gene" and controls the plant height of rice.

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Annotated Information

Function

This gene is originally derived from the Chinese cultivar Dee-Geo-Woo-Gen (DGWG). It encodes an oxidase enzyme involved in the biosynthesis of gibberellin, which is a plant growth hormone. The rice genome carries at least two GA20ox genes (GA20ox-1 and GA20ox-2). SD1 corresponds to GA20ox-2. Mutation of SD1 will cause a semi-dwarf phenotype of rice without seed yield being affected^[2]. It is not surprising that a rice semidwarfing gene encodes GA20-ox since successful production of semidwarf plants using antisense or overexpressed GA20-ox genes has been reported in Arabidopsis, Solanum dulcamara, potato, and lettuce^[1].

It is a key enzyme in the biosynthesis of gibberellin that catalyses the three steps GA53->GA44->GA19->GA20. Impaired GA 20-oxidase activity will cause elevated content of GA53, and reduced amount of G20^{[2][3]}. However, there is slight difference between different strains. The extent of GA1 is lower in Doongara (semi-dwarf rice strain) when compared with Kyeema (tall), while there is no significant difference between Calrose76 (semi-dwarf rice strain) and Calrose (tall). Calrose76 has lower contents of GA44 and of GA19 than Calrose, while there is no significant difference between Doongara (semi-dwarf rice strain) and Kyeema (tall)^[3].

GO assignment(s): GO:0005506, GO:0016216, GO:0017000

Semidwarf VS. normal-type rice plants at ripening (from reference^[1]).

(B)

Figure S1 Screenshots of the *sd1* gene, available at <http://ricewiki.big.ac.cn/index.php/Os01g0883800>. (A) Community-curated information, including the resulting authorship and curated information. (B) Reward details, including contributor name, contribution score, edit count, etc. The cut-off score for awarding authorship is configurable and set to 1 by default.

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