Molecular mechanisms regulating dormancy in overwintering buds (OWBs) in herbaceous perennials such as gentian (*Gentiana*) are unclear. Takahashi et al. (pages 3949–3963) conducted targeted metabolome analysis to obtain clues about the metabolic mechanisms involved in regulating OWB dormancy. The results show that the oligosaccharide gentiobiose accumulates prior to budbreak and acts as a signal for dormancy release of gentian through the ascorbate-GSH pathway. The cover shows *Gentiana triflora* cv Iwate Yumeaoi, cultivated from a wild gentian species native to higher elevation meadows, forests, hills, and mountains of China, Mongolia, Eastern Russia, Korea, and Japan.
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