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Synthesis of natural homoisoflavonoids having either 5,7-dihydroxy-6-methoxy or 7-hydroxy-5,6-dimethoxy groups

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Recently, the antiangiogenic homoisoflavonoid cremastranone isolated from the plants *Muscari armeniacum, Chionodoxa luciliae, Scilla natalensis, Merwilla plumbea* and *Cremastra appendiculata* was synthesized for the first time by us. Its naturally occurring congeners, which contain either 5,7-dihydroxy-6-methoxy or 7-hydroxy-5,6-dimethoxy groups, have been reported already as shown in Figure-1 and most of them lack common names other than eucomnalin (9; autumnalin) and 3,9-dihydroeucomnalin (4; 3,9-dihydroautumnalin). Two review articles deal with the natural origins and structures of most homoisoflavonoids and thereafter various studies of the homoisoflavonoids have been published. Nevertheless, there have not been synthetic efforts towards such homoisoflavonoids since the synthesis of 4 and 9 was reported in 1971. A chemical synthesis of 5,6,7-trisubstituted homoisoflavonoids has the potential to provide a general and expedient entry into a plethora of analogues potentially with interesting biological activities. Herein we report the first synthesis of cremastranone's derivatives in three or four steps from the known 4-chromenone, involving a chemoselective 1,4-reduction and manipulation of protecting groups.

Biography

Myunghoe Heo was graduated from Sun Moon University, Department of Chemistry (2011-2017). In 2017, he has joined Professor Seo's Medicinal Chemistry lab in Department of Pharmacy at Gachon University. His interest area is synthesis homisoflavanone analogs for the treatment of macular degeneration.

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