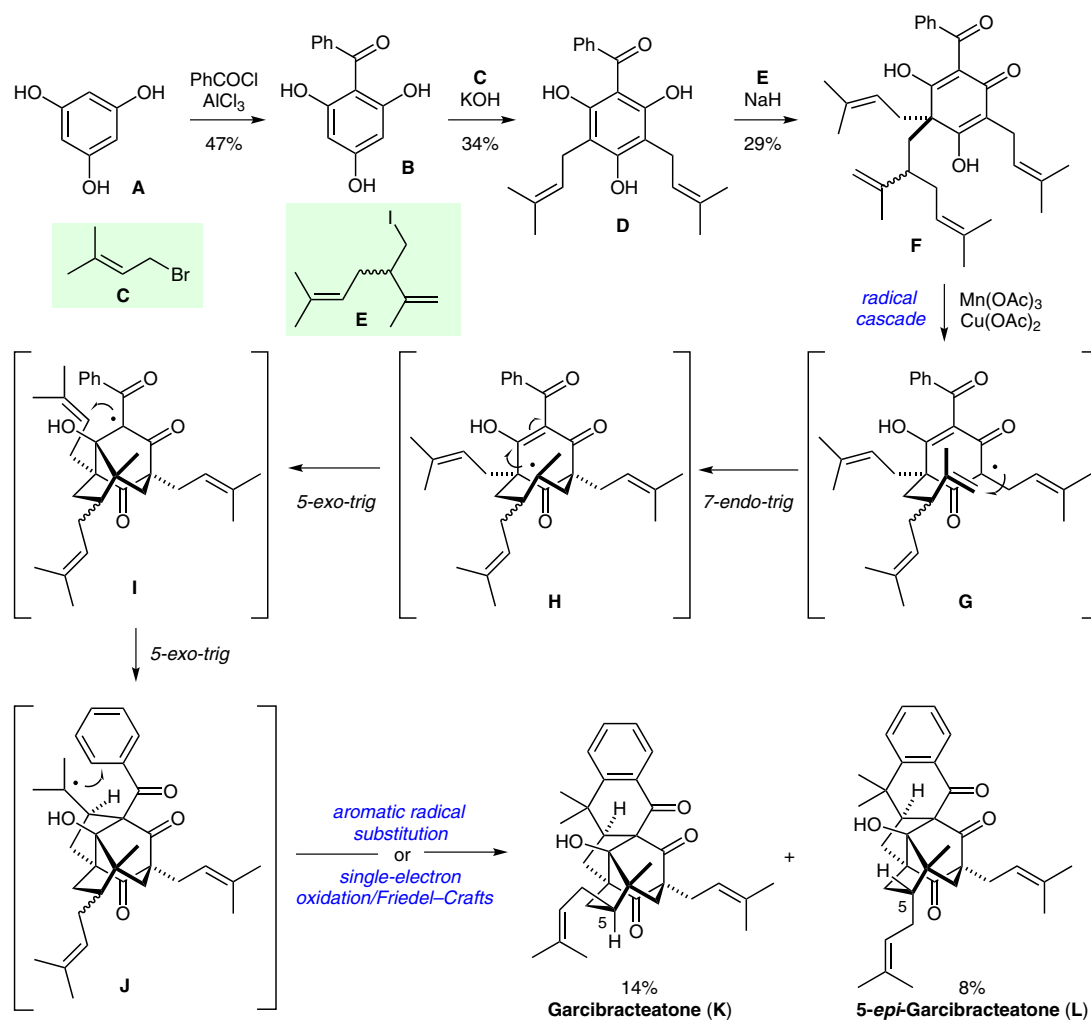


## Total Synthesis (±)-Garcibracteatone



**Significance:** Garcibracteatone (**K**) is the structurally most complex polycyclic polyprenylated acylphloroglucinol natural product that has so far been isolated. The four-step total synthesis presented makes use of a biomimetic radical cascade reaction to build up four rings in one transformation. Additionally, the previously unknown relative stereochemistry at C-5 was assigned.

**Comment:** Precursor **F** for the key transformation is synthesized from phloroglucinol **A** in three steps by Friedel–Crafts acylation followed by subsequent diprenylation and alkylation with (±)-lavandulyl iodide (**E**). Oxidation of **F** by using  $\text{Mn}(\text{OAc})_3$ – $\text{Cu}(\text{OAc})_2$  initiates a radical cascade, which ultimately leads to the formation of the natural product garcibracteatone **K** (14% yield) along with its C5-epimer **L** (8% yield). This key transformation constructs four rings and five stereocenters.