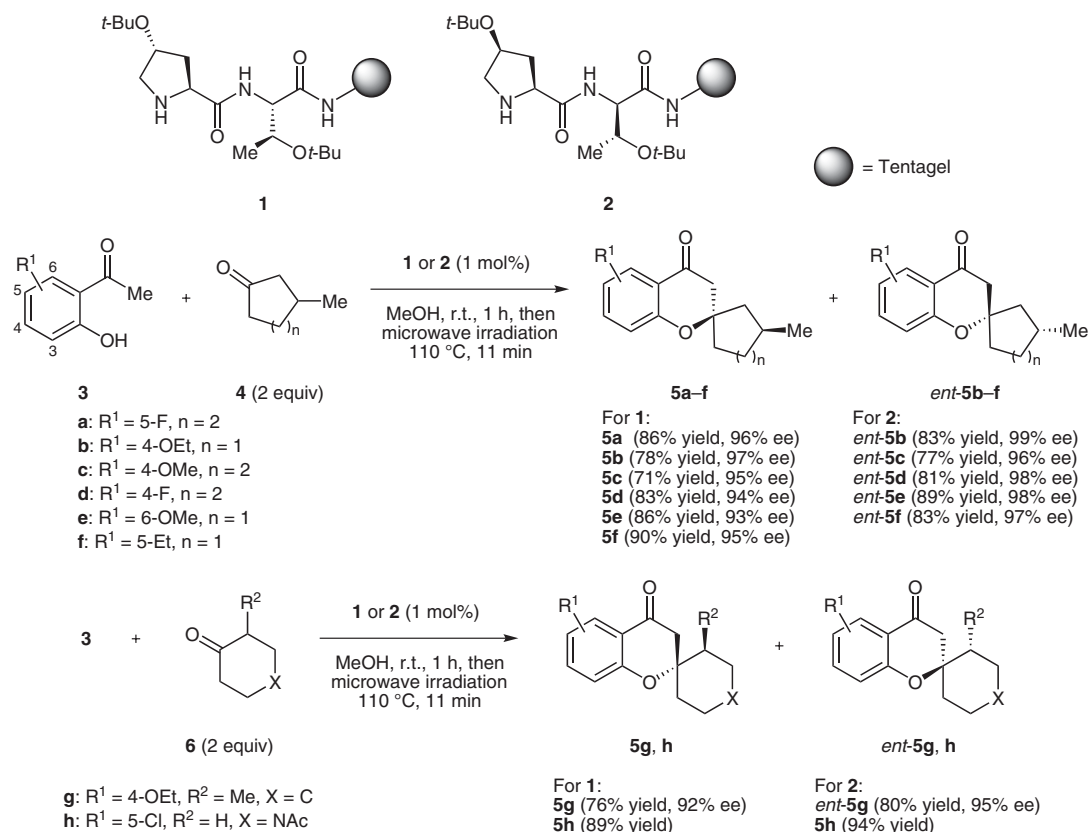


# Resin-Bound Pyrrolidine Catalysts for Enamine-Mediated Reactions



**Significance:** Tentagel-bound asymmetric pyrrolidine catalysts **1** and **2** are reported for the preparation of optically active chromanones **5**. The catalysts mediated the asymmetric tandem aldol–Michael reactions with high enantioselectivity and complete diastereoselectivity. Thus, the reaction of **3** and cycloalkanones (**4** and **6**) was carried out with **1** in MeOH. The reaction mixture was then heated under microwave irradiation to give **5a–h** in 71–90% yield with up to 97% ee (8 examples). The reaction with **2** under similar conditions afforded **ent-5b–g** and **5h** in 77–94% yield with up to 99% ee (7 examples).

**Comment:** The polymeric catalysts were also effective for kinetic resolution of racemic 3-methylcycloalkanones **4** with **3** (2 equiv) to give the unreacted 3-methylcycloalkanone in 35–43% yield with 95–99% ee. Enantioselective aldol, Michael, and Robinson annulations, as well as Mannich reactions with catalysts **1** and **2** are also described.