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Efficient Au(I)-catalyzed one-pot cascade synthesis of 2,5- Dimethylpyrazine (DMP) derivatives

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Transition-metal-catalyzed cyclocondensation of unsaturated compounds is one of the most important reactions to develop the atom-economic synthetic methods for cyclic compounds. Propargyl amine is one of the useful synthons in the synthesis of nitrogen-containing heterocycles since it has multiple reactive sites. In this presentation, we would like to report a one-pot cascade synthesis of 3-substituted 2,5-dimethylpyrazine derivatives in good yields by the cyclocondensation of propargyl amines with aldehydes in the presence of Au (I) complex. The construction of pyrazine ring is resulted from a domino procedure involving the reaction steps of intermolecular hydroamination, intramolecular cyclic hydroamination and dehydration reaction. The present work has developed the new application of propargyl amine in the synthesis of 2,5-dimethylpyrazine (DMP) derivatives, which possess significant biological activity such as fungicides and pheromones.

Biography

Ruimao Hua has completed his PhD at Tokyo Instituted of Technology (Japan) in 1996, and he is now the professor of chemistry at Tsinghua University, Beijing, China.

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