

Microwave Irradiated Synthesis of Pyrazole-Carboxamides

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ABSTRACT:

To resolve the environmental issues scientists are always looking for alternative environmental friendly technology. Synergism of microwave acceleration offers rapid, yield enhancing and smooth reaction path with smooth work-up, some-times provide solvent-free condition and can be scaled up. Pyridine and pyrazole moieties are found in a large variety of naturally occurring and chemically useful molecules having diverse biological activities. Further amide bond formation is highly active. Drugs based on pyrazole linked to pyrimidine with amide bond such as Cyantraniliprole, Meclinertant and many more are available in market. It is always been interesting to study new technological development for coupling, where T₃P is found to be the most efficient providing facile acid-amine coupling with high purity and cost effective methodology for the manufacture of amides and esters, which are important ingredients for pharmaceutical and other industries. A comparative study of amide coupling using T₃P and other coupling agents like HOBt, TBTU, HATU etc. and T₃P catalyzed microwave irradiated synthesis of novel N-pyridinylpyrazole-4-carboxamides has also been carried out, where T₃P catalyzed microwave irradiated was found to be rapid and yield effective.