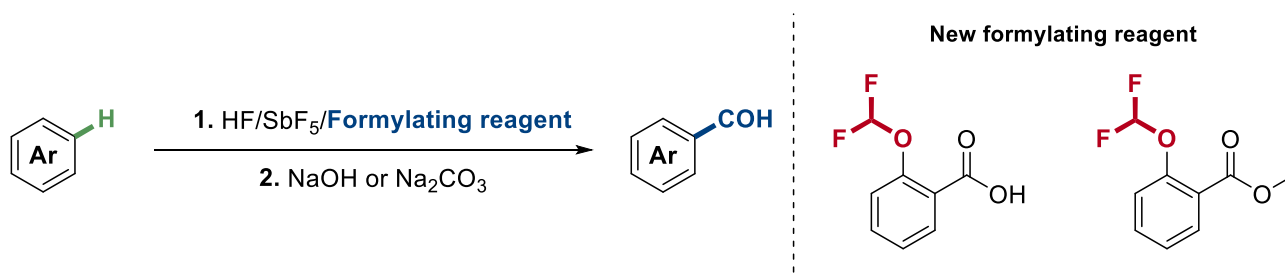


DIRECT FORMYLATION OF AROMATICS UNDER SUPERACID ACTIVATION

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The pharmaceutical and agrochemical industries are constantly looking for new molecules, motivating strong need for the development of efficient methods to functionalize complex structures. Direct formylation of aromatic compounds is a synthetic approach that enables the introduction of an aldehyde directly onto the aromatic core without requiring a previous activation of the substrate. Among the carbonyl functions, the formyl group is one of the most reactive, it results to the simplification of synthetic pathways, reducing the number of steps needed to synthesise complex molecules. However, the already known methods are facing several limits, particularly in terms of selectivity control, reactivity and tolerance to various functional groups.^[1, 2, 3] Under superacidic conditions (HF/SbF₅),^[4] organic molecules, especially functionalized aromatic compounds, can be polyprotonated, facilitating functionalization at positions that are often difficult to modify using conventional methods. Thanks to this unique reactivity, we were able to develop new late-stage functionalization strategies to directly diversify complex molecules.^[5, 6, 7] In this context, a novel method of aromatic formylation has been developed in superacidic media HF/SbF₅, using the superelectrophilic^[8] activation of specially designed and easily accessible formylation reagents.



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