

ABSTRACT

5,6-Dihydro-2*H*-pyran-2-ones are naturally occurring substances, very widely distributed in the nature. Their biological activities have been known for a long time. In last few decades, along with the development of instrumental equipment and synthetic skills of modern chemistry, systematic research and structure-activity relationship's of these compounds became a challenging task. This review embraces monosubstituted pentenolides, mostly those, substituted in the 6-position. Furthermore, it reveals the possible reason for the generally exclusive natural occurrence of the 6-substituted 5,6-dihydro-2*H*-pyran-2-ones on the opposite to other – 3, 4 and 5-substituted analogues. This review describes most of known naturally occurring monosubstituted pentenolides, including their structure and confirmed or suspected biological activities. Synthetic approaches to pentenolides have been considered and collected.