

## Small Molecules with Potential Biological Activities

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### ABSTRACT

Natural products are unique source for drugs discovery. Several small molecules such as anthraquinones flavokawain B and curcumin related compounds exhibited tremendous biological activities. Curcumin and related compounds containing 1,3-diketone moiety, which is also essential biological activities possessing various pharmacological activities such as anti-cancer, anti-inflammatory, anti-oxidant and anti-diabetic properties. Various naturally occurring compounds have been synthesized and investigated for their cytotoxic properties against breast cancer cell lines MDA-MB231 cells. A series of mono-carbonyl curcuminoids analogs have been synthesized by Claisen Schmidt condensation reaction by using acid or base catalysed reaction. Various analogues especially 2,6-bis(4-bromobenzylidene)cyclohexanone, 1,5-bis(4-hydroxy-3-methoxyphenyl) penta-1,4-dien-3-one and 1,5-bis(2,5-dimethoxyphenyl)penta-1,4-diene-3-one showed the potential anticancer activity. Together, these results some natural compounds isolated from *Knema laurina* showed acetylcholinesterase inhibitory activities. The compounds were purified by column chromatography and their structures were determined by <sup>1</sup>H NMR, GC-MS, and single X-ray analysis techniques.

**Key words:** Anthraquinones, curcuminoids, alpha glucosidase and acetylcholinesterase inhibitors.