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(57) Abstract :
The present disclosure relates generally to field of pharmaceuticals. Specifically, the present disclosure provides (un)substituted piperazin-1-yl-chromen-4-one based compound(s) of formula I, its pharmaceutically acceptable salt(s), prodrug(s) or isomer(s) thereof, a process of preparation and pharmaceutical composition thereof, to inhibit the aldose reductase-2 enzyme. The aldose reductase converts glucose into sorbitol in polyol pathway, the excess accumulation of which in case of hyperglycemia leads to cell dysfunction in a number of tissues causing diabetes related complications. Such complications are decreased or alleviated by said compounds/compositions at specific therapeutic concentration, e.g. 2.0 μM concentration of the compound showed effective ALR-2 inhibition.

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