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Novel synthesis of Nitro-Quinoxalinone derivatives as Aldose reductase inhibitors

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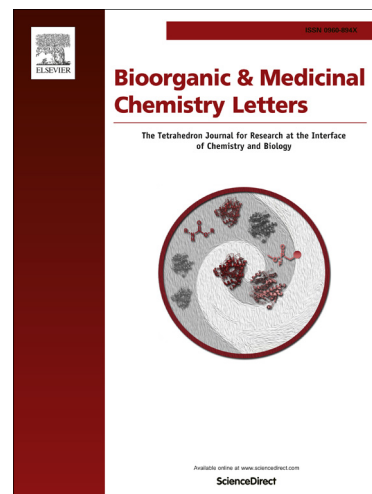
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1 **Novel synthesis of Nitro-Quinoxalinone derivatives as Aldose reductase inhibitors**

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8
9 ^aAbbreviations: ALR2, Aldose reductase; AKR, aldo-keto reductase; NADPH, β -nicotinamide adenine
10 dinucleotide phosphate reduced form; ARIs, Aldose reductase inhibitors; SAR, structure-activity
11 relationship

12
13 **Abstract**

14 A novel, non-acid series of nitroquinoxalinone derivatives was synthesized and tested for their
15 inhibitory activity against aldose reductase as targeting enzyme. All active compounds displayed an
16 8-nitro group, and showed significant activity in IC₅₀ values ranging from 1.54 to 18.17 μ M. Among
17 them 6,7-dichloro-5,8-dinitro-3-phenoxyquinoxalin-2(1H)-one (**7e**), exhibited the strongest aldose
18 reductase activity with an IC₅₀ value of 1.54 μ M and a good SAR (structure- activity relationship)
19 profile.

20 **Keywords**

21 Quinoxalinone derivatives, Aldose Reductase inhibitors, Structure-Activity relationship

22

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