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Synthesis and biological activity of some 3-hydroxy-1,5-diaryl-4-pivaloyl-2,5-dihydro-2-pyrrolones

© **Svetlana S. Zykova**,[1*+] **Vladislav N. Lyuboseev**,[1] **Tatiana F. Odegova**,[2] and **Aigul R. Galembikova** [3]

[1] *Department of Animal Science. FKOU VPO Perm FSIN Institute of Russia. Karpinski St., 125. Perm, 614012. Russia. Phone: +7 (342) 228-60-77 (253). E-mail: zykova.sv@rambler.ru*

[2] *Department of Microbiology. FSBEI HPO Perm State Pharmaceutical Academy. Polevaya St., 2. Perm, 614099. Russia. Phone: +7 (342) 233-55-01. E-mail: perm@pfa.ru*

[3] *Department of Pathological Physiology and anatomy. FSBEI HPO Kazan State Medical University. Butlerov St., 49. Kazan, 420012. Republic of Tatarstan. Russia. Phone: (843) +7 (843) 236-72-63. E-mail: boichuksergei@mail.ru*

*Supervising author; +Corresponding author

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Abstract

On the basis of the reaction of pivaloilpiroparatartaric acid and arylidenearylamines different 3-hydroxy-1,5-diaryl-4-pivaloyl-2,5-dihydro-2-pyrrolones were synthesized. Due to the urgency of finding new biologically active compounds, antioxidant, anti-inflammatory and cytotoxic activity of the obtained 2-pyrrolones were investigated. Antioxidant properties of the obtained compounds were studied on the model of oxidative stress, generated 3mm solution of hydrogen peroxide, using as a test system of bacteria *Escherichia coli* strain BW 25113. As reference standard resveratrol was used. The anti-inflammatory activity has been studied *in vivo* on the model of karraginin inflammation. Two compounds were found with moderate antioxidant activity, and four compounds having anti-inflammatory properties activity, one of which exceeds the comparison drug diclofenac sodium. The synthesized 4-pivaloyl-2-pyrrolones are not cytotoxic.