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Short Communication

Flavonoids as Potential Cardiopharmacological Substanses

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Nowadays, in pharmaceutical industry researches find cure against many various diseases, the direction of tendency is observed towards the growth of interest to search and create medical products based on bioflavonoids. Development of this field depends on having many advantageous pharmacological viewpoints of flavonoids. Many plant types containing flavonoids have been used in traditional Oriental medicine for thousands of years [1].

Flavonoids are unique secondary metabolites are synthesized in almost all plant cells, exhibiting high biological activity and due to their properties increasingly finding wide practical application in pharmacology and medicine. A wide range of biological activities and low toxicity puts them in a row promising compounds in this respect. Therefore, in pharmaceutical industry researches find cure against many various diseases, the direction of tendency is observed towards the growth of interest to search and create medical products based on bioflavonoids [2,3].

Cardio–pharmacological experimental studies in conditions *in vitro/in vivo* and traditional medical literature point to the cardiovascular effects of bioflavonoids in many instances [4]. The experimental results indicated the potential inotropic and anti–arrhythmic effects of flavonoids in treating cardiovascular diseases. In the investigations is shown, that a positive inotropic effect on rat papillary muscles that can be explained with the increase of [cAMP] in and may depend on increase of $[Ca^{2+}]$in. Also, another possible mechanism of the positive inotropic effect of flavonoids on the rat papillary muscles can be inhibited Na^{+}/K^{+-}ATPase via activation of reverse–function of the Na^{+}/Ca^{2+}–exchange which increase $[Ca^{2+}]$in. And some flavonoids may induce a negative inotropic effect in rat cardiac muscles and this effect at least partly be mediated by NO/cGC/cGMP/PKG pathway [5].

And, reported, that the inotropic/antiarrhythmic effects of the flavonoid fractions may have been related to functional modulation of Na+– and Ca^{2+}–channels in cardiomyocytes [6,7].

In conclusion, the intense interest in the development of cardiovascular pharmacological drugs means that flavonoids may represent potential cardiopharmacological substanses in the quest to develop of a new generation of cardiovascular drugs.

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