after the dosage (20 mg/kg of body weight) let us conclude that pharmacokinetics of amoxicillin give a warranty of effective treatment with the applied doses in spite of differences in species.

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Determination of reaction progress in synthesis of EE-3 by NMR technique

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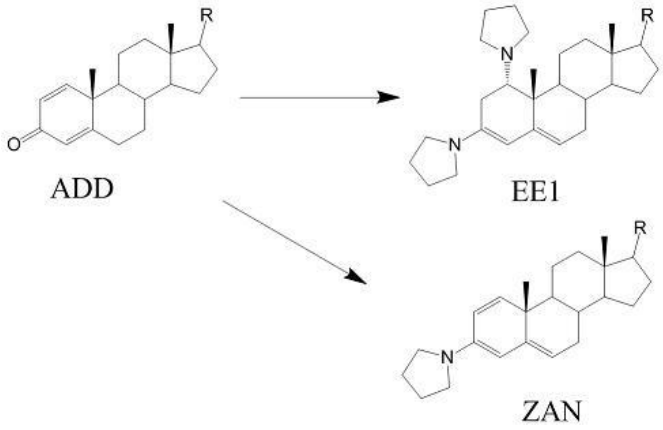
Steroids, natural or synthetic organic compounds, characterized by the molecular core structure of 17 carbon atoms arranged in four fused rings, play a crucial role in biology, chemistry and medicine. Among the synthetic steroids of therapeutic value, there is a large number of anti-inflammatory agents, vitamins, growth-stimulating agents, oral contraceptives and others. Steroids classified as progestogens or aromatase inhibitors are approved for use in breast cancer therapy.

Modifications in the molecular structures of steroid compounds can produce significant differences in their biological actions. The key task in the described synthesis of EE-3 anticancer drug is the activation of an unreactive *6* position in steroid skeleton. The activation can be achieved by the transformation of substrate ADD into dipyrrolidinyl intermediate EE-1.



Due to the optimization procedures, the reaction time should be controlled. Although different analytical methods might be effective to monitor the reaction progress, the NMR technique seems to be the most relevant in our case. The well separated proton signals, matching with the substrate ADD, product EE1 and impurity ZAN, were observed in ^{1}H NMR spectrum. It allows to apply a single spectrum data for the identification and quantity determination of the above mentioned substances in the reaction mixture.

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Examination of 5-HT$_6$ receptor affinity in the group of arylsulfonamide derivatives

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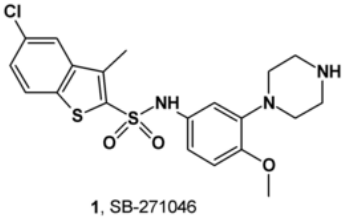
According to the recent research studies 5-HT$_6$ receptors have gained special interest as a drug targets for diseases such as Alzheimer's disease, anxiety/depression and schizophrenia.
This stimulated an intensive research and several new compounds have been developed as a 5-HT$_6$ agents. Due to the arylsulfonyl moiety was a common feature of nearly all published structures, it was proposed that it constitute an important pharmacophoric element, which can influence 5-HT$_6$ affinity. Therefore a series of arylsulfonamide derivatives (2) recently developed as 5-HT$_7$ ligands, were examined additionally at 5-HT$_6$ receptors. The results of receptor binding experiments revealed that the tested compounds displayed a broad range of affinity for 5-HT$_6$ receptor (K_i = 43 – >10 000 nM) and diverse selectivity with respect to other monoamine receptors.



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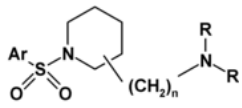

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Application of fermentation in protein hydrolysates utilisation

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Recent studies evidenced that short peptides are able to penetrate gastrointestinal-blood barriers in intact form and modulate number of life processes. Therefore, short peptides might be regarded as very important active component of food. In normal digestion process short peptides are formed from food protein. However, in various pathological conditions diet should be supplemented with protein hydrolyzates as nutraceutics. Previously, we developed pig spinal cord protein hydrolysate as nutraceutic supporting treatments of autoimmunological diseases of the nervous system, likesclerosis multiplex. The active preparations have been obtained in pepsin digestion process. Unfortunately, the digestion resulted in formation of