

## 5. CONCLUSION

In this study, the ligand binding properties of two enzymes – purine nucleoside phosphorylase and thymidine phosphorylase – were tested, exploiting a method of surface plasmon resonance in Biacore X instrument.

PNP is a ubiquitous enzyme playing a key role in the purine salvage pathway and TP plays an important role in human organism too, especially in pathological processes like inflammation or cancer. Both of enzymes are potential tools for the enzymatic synthesis of nucleoside analogues, which may possibly be used as antiviral or anticancer agents and that are difficult to prepare by chemical synthesis, or are obtained in a low yields.

Use of Biacore X instrument helps to reveal how the enzymes interact with their natural substrates or derivatives. This work was focused on searching for the most suitable conditions, at first for immobilizing procedure (coating the surface of the sensor chip with PNP and TP enzyme) and then for interaction analysis between the enzymes and their natural substrates. The present results can be used as starting point for additional investigations of interaction analyses between enzymes and semi-synthetic analogues or they can also contribute to optimize conditions of producing such compounds by biocatalysis. In particular, the use of enzymes as biocatalysts allow the stereo- and regio-selective formation of the glycosidic bond and application of this technique may improve the availability of desired nucleosides.