

## 5. CONCLUSION

This work was focused on the synthesis of new triterpenoids – named highly oxidized derivatives of 18 $\alpha$ -oleanane, their reductive products or products with heteroatoms, for example fluorine, nitrogen, sulfur or phosphorus. Part of this thesis was focused on reactions of lupane and 18 $\alpha$ -oleanane triterpenoids with Lawesson's reagent.

1. Highly oxidized 18 $\alpha$ -oleanane derivatives were synthesised, in particular on A-ring. Commercially available reagents were used for these oxidations: MCPBA, SeO<sub>2</sub> or peroxyacetic acid (as a persteril). A group of seco derivatives was prepared by reactions with *in situ* prepared RuO<sub>4</sub>. A great deal of this section has been already published in scientific journal.<sup>24</sup>
2. A group of 18 $\alpha$ -oleanane alcohols (e.g. **15**, **16a**, **16b**, **19**, **20**, **22**) was prepared from some oxidized derivatives (e.g. **2**, **3**, **13**, **18**) by reactions with LiAlH<sub>4</sub> or NaBH<sub>4</sub>.
3. Reactions of some ketones were carried out (e.g. **3**) with fluorinating agent DAST for preparation of new fluorinated derivatives (e.g. **24**, **25**). The same ketones reacted with ethanedithiol to afford new dithiolanes (e.g. **26**). Diketone **3** was also used for synthesis of several nitrogen containing derivatives. Preparation of pyrazine **27** and quinoxaline **28** has been already published in scientific journal.<sup>25</sup>
4. The reactions of lupane and 18 $\alpha$ -oleanane triterpenoids with Lawesson's reagents were studied. A group of sulfur, respectively phosphorus derivatives were obtained: thioketone **29**, dimer sulfides (e.g. **31**), cyclic sulfides (e.g. **33**), sulfur and phosphorus heterocycles (e.g. **36a**, **36b**, **37**) and thioacetates.
5. In summary, all of the 79 new compounds prepared during my postgraduate work were tested using *in vitro* method of MTT-test<sup>22</sup> in Laboratory of Experimental Medicine, Department of Paediatrics, Faculty of Medicine, Palacký University Olomouc (in collaboration with MUDr. Marián Hajdúch). Several efficient compounds (IC<sub>50</sub> < 10  $\mu$ mol/l) were found, which are subjected to other tests nowadays.