

## SUMMARY

### **Determination of Transkarbam 12 and Its Impurities Using HPLC Coupled with MS Detection**

Master paper

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This paper deals with determination of Transkarbam 12 (T 12), its three impurities  $\epsilon$ -aminocaproic acid (Ak),  $\epsilon$ -caprolactam (Ka) and the adduct of T 12 and Ak, and of the internal standard which was 8-aminooctanoic acid (Ao). Transkarbam 12 is a new substance which belongs to the group of accelerators of transdermal penetration. Such substances facilitate or enable the drugs passing through the skin barrier into the system circulation. Chromatographic conditions were optimised for determination of the above listed substances using HPLC coupled with MS detection. Using the direct injection MS and MS/MS spectra of all substances were taken and conditions of their detection were optimised. Chromatographic separation was achieved using Luna Phenyl-Hexyl analytical column (5  $\mu$ m, 150 x 3.0 mm). Mobile phase contained water and acetonitril with 0.025 % addition of formic acid. Separation was carried out under the gradient elution with the profile 0. - 1. min 4 % acetonitrile; 1. - 25. min 4  $\rightarrow$  55 % acetonitrile; 25. - 30. min 4 % acetonitrile. Under these conditions following retention times were achieved: Rt (Ak) = 1.84 min; Rt (Ao) = 2.82 min; Rt (Ka) = 9.91 min; Rt (T 12) = 22.41 min; Rt (adduct) = 22.94 min.