

PMSE 290

Polycarnitine - a new biomaterial

Dr. Birgit Kamm, Research Institute Bioactive Polymer Systems e.V, University of Potsdam, Kantstraße 55, Teltow, 14513, Germany and **Michael Kamm**, biorefinery.de GmbH, Stiftstraße 2, Potsdam, 14471, Germany.

Carnitine (CAS: 1-propanaminium,3-carboxy-2-hydroxy-N,N,N-trimethyl-hydroxide, inner salt) is a betaine that can be found in tissue of animals, plants and microorganism, which firstly was isolated in 1905 from extract meat. Carnitine has a great physiological importance, particularly as an essential cofactor of the fat metabolism and was considered as a vitamin BT for a long time. The cosmetic industry is also shows in carnitine compounds. In addition to the physiological action, carnitine also shows 'stiffening' effects in muscle tissue. These properties, the optical activity, the good solubility in protic solvents, such as water as well as improved availability via biotechnological processes [1] makes carnitine interesting for many areas of chemistry. Carnitin is converted via lactone- and olefine-formation into synthesis building blocks with ability for polymerization. The concept and results of the synthesis of defined polymeric structures with electrolyte- and ampholyte- properties and theirs applications at pharmacy and cosmetic will be presented [2, 3].

Literatur: [1] KLEBER et. al.; Enzyme and Microbial Technology 21: 531-536, 1997 [2] KAMM, M. et al.; Polyesters and oligoester of cationic hydroxy acids, methods for production and use thereof, PCT/ WO 01/94441, 11.05.2001 /13.12.2001 [3] KAMM, M. et al.; Oligomers und Polymers from crotonic betaine or crotonic betaine derivatives; PCT/ WO 01/94429; 10.05.2001/13.12.2001

[Joint PMSE/POLY Poster Session: General Papers/New Concepts in Polymeric Materials](#)

[Division of Polymeric Materials: Science and Engineering](#)

[The 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004](#)