żej powiązane z zasadniczymi mechanizmami warunkującymi trwałość procesu patologicznego.

Słowa kluczowe: uzależnienia, nawroty, geny c-fos, sensytyzacja

## Woiciech Kostowski

Persistence and relapses of dependence symptomatology: in search for neuronal and molecular background

## SUMMARY

Motivational processes disorder leading to craving, drug seeking and drug taking behaviour is central to the symptomatology of drug dependence. Drug dependence, called also chronic relapsing disorder, results from neuroadaptations that occur with repeated drug administration. These changes can be seen on various levels – either that of receptors, secondary transmitters such as the cyclic AMP system, protein kinases, or at the molecular level involving gene transcription and expression. The recent interest of researchers has focused on the molecular level changes responsible for or temporally related to stable behavioural disorders typical of the dependence process. Particular attention is paid to immediate response genes of the c-fos family and their protein products such as the cFos protein. The fos-B gene products such as the  $\Delta$ Fos protein have been recently found to result from long-term administration of substances of abuse and to persist for a long time. Thus, they may be involved in crucial mechanisms underlying the pathological process persistence.

Key words: drug dependence, relapse, c-fos genes, sensitisation

## PIŚMIENNICTWO

- Altman J., Everittt B. J., Glautier S., Markou A., Nutt D., Oretti R., Philips G. D., Robbins T.
  W.; The biological, social and clinical bases of drug addiction: commentary and debate.
  Psychopharmacology 1996, 125: 285-345.
- 2. Bieńkowski P.: Glód alkoholu i nawroty picia postępy psychofarmakologii doświadczalnej. Farmakoterapia w Psychiatrii i Neurologii 1999, 3: 82-96.
- 3. Bieńkowski P., Kuca P., Piasecki J., Kostowski W.; Low dose of ethanol induced conditioned place preference in rats after repeated exposures to ethanol or saline injections. Alcohol and alcoholism 1996, 31: 547-551.
- Carr G.D., Fibiger H.C., Philips A.G.: Conditioned place preference as a measure of drug reward. W: The Neuropharmacological Basis of Reward (red. J.M. Lieberman i S. Cooper), Oxford University Press, New York, Oxford, 1989, 264-266.
- 5. Chandler L.J., Harris R., Crews F.T.: Ethanol tolerance and synaptic plasticity. Trends in Pharmacol. Sci. 1998, 19: 491-495.
- 6. Chen J. S., Kelz M. B., Hope B. T., Nakabeppu Y., Nestler E. J.: Chronic FRAs: stable variants of DfosB induced in brain by chronic treatments. J. Neurosci 1997, 17: 4933-4941.