

Effects of 3,3',4,4',5-pentachloro biphenyl (PCB126) on the Expression the Tight Junction Genes in Cultured Mouse Neonatal Testis

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In an effort to uncover the spermatogenic impairment by the polychlorinated biphenyls (PCBs), the expression of tight junctions (TJs) genes important for the formation of the blood testis barrier (BTB) were examined following the 3,3',4,4',5-pentachloro biphenyl (PCB126) treatment in cultured neonatal testis in mice. At 4 days (D4) after 10 and 100 nM PCB126 treatment the expression of claudin-11 was significantly increased when compared with vehicle control. In contrast no difference in occludin and claudin-1 expression was found among the experimental group. On D8, 100 nM PCB126 significantly increased the expression of claudin-11 but not occludin and claudin-1. 1 μ M PCB126 treatment significantly decreased expressions of occludin and claudin-1, suggesting the general toxic effect on the Sertoli cell. Because PCB126 does not alter the proliferative activity of spermatogenic cells and Sertoli cells in neonatal testis, it is likely that increase in the expression of claudin-11 by low dose of PCB126 may attribute to the alteration of the Sertoli cells differentiation in testis. It also emphasized that PCB126 might have differentially affected the transcription of TJ genes in Sertoli cells. In conclusion, this result suggests that the structure of TJ may be targeted by PCB126 in neonatal testis in mice and that co-PCB is potentially harmful to spermatogenesis by alteration of the development of BTB.

Key words) *PCB, Sertoli cell, testis, mouse*