H-210
末梢神経の再生は脇体から生じるか？
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末梢神経の再生過程を観察するために，ラットの経時的神経と繊維神経を抜神経
切り抜き部から1 cmまでで切断し，脇体外側に10 50%の重複し，一方の経時的
神経は担架にLaCZ遺伝子持続化させたアリゲータジムを付与させ，観察した。
後肢3 4週後4％パラフルオールアルコールと0.1％アクリルアルコール混合
固定処理で硬膜固定し，手術体位により骨盤まで遮蔽して取り出した。染色セル
フ酸ガラス基板でインキュベートした。染色を確認したところでアリゲータジムに入
れ，遮蔽し，全体標本として実験後乾燥で観察した。なお本法で未梢に伴った
脇体発生経路は切除された。観察された末梢神経の転居とその再生過程である。
経時的神経の再生過程を観察した。脇体発生経路は観察されなかった。
そこでこの観察を未梢から脇体に向かって進む，脇体転居も多く観察できた。観察神経
については，現在まで未梢神経に入れる脇体を持つ末梢神経転居は観察されて
いない。しかし観察で観察者を経過の一部に伴う脇体神経転
発生が報告されている。以上の所見は，末梢神経の再生性は切断端のみならず脇体
あるいはその近傍からも生じることを示唆する。

H-211
ヒト下顎神経の神経線維解析と加齢変化
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我々はヒト下顎神経を構成する神経線維を求め目的的検討に着手した。髄鞘の6
例（60歳から50歳）の末梢神経を選び，それらを採取した正常な下顎神経を提示し
た。検査法はアリゲータジムでクロネタ酸化染色を行い，ニトロセルロースに
包した。識別染色のMasson Goldner後染像法を用いて，神経線維を有髓性
と無髓性線維に分けることが可能である。有髓線維の数の検索を望む環境条件
と遺伝子検査に用いて計測した。髄鞘厚の数の統計的検定にものが70 75μmで，有
有髓線維の密度は100 200 μm 2であった。有髓線維の密度と高齢者の髄鞘
分岐数では，加齢とともに髄鞘が細かくなることが示された（相関係数r=0.964).この
研究は加齢とともにヒト下顎神経に生じる神経線維の変化を初めて明らか
にした。

H-212
The expression and role of galectin-1,2 in the primary afferent system of rats
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Galectin-1,2 members of the endogenous β-galactoside-binding lectins, are suggested to be involved in a variety of functions, such as neurite outgrowth, synaptic connectivity, cell proliferation and apoptosis. These proteins are expressed in the dorsal root ganglion (DRG) and the spinal cord in the developing and adult rats, especially intensively in small DRG neurons, but their precise roles are not known. Analysis using serial sections revealed that about 90% of the intensely galectin-1,2-IR DRG neurons were c-Ret mRNA positive, indicating their dependency on GDNF family ligands. Galectin-1,2-IR in the dorsal horn were increased 1 to 2w after axotomy, which was also confirmed by Western blotting. Ox42 staining clearly demonstrated axotomy-induced microglial activation in the dorsal horn. Intrathecal infusion of galectin-1 Ab further enhanced Ox42 staining in the dorsal horn of axotomized rats. These findings suggest that endogenous galectin-1 attenuates microglial activation and pathological pain (due to nerve injury) in the dorsal horn. The role of galectin-3 in the primary afferent system is now under investigation.

H-213
Immunocytochemical localization of anion exchanger-2 (AE-2) in the sensory ganglia of the rat
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Anion exchangers (AE) are family of membrane carriers that mediate the electrochemical exchange of Cl for HCO3 ions across the cell plasma membrane. Three members of AE family (AE1, AE2 and AE3) have been characterized. In the present study, we examine the immunocytochemical localization of AE2 in dorsal root ganglion (DRG), trigeminal ganglion (TG) and trigeminal mesencephalic nucleus (MvM) of the rat. Approximately 32% of DRG neurons exhibited AE2-immunoreactivity (LI) at their membra. Satellite cells and nerves fibers lacked immunoreactions. The range (mean ± SEM) of their cross-sectional area was 4761±3322 μm (1650±12 31 μm 2). Under electron microscope. AE2-IR neurons had a large cluster of endoplasmic reticulum (ER), being categorized as large light A neurons. Approximately 56.0 % and 84.0 % of AE2-IR neurons showed carbonic anhydrase II- and parvalbumin-II, respectively, but colocalization with CGRP or SP was very rare. In TG, AE2-LI was detected in the large-sized neurons, but MgMV neurons lacked AE2-LI. The present results suggest that AE2 is the specific membrane marker for population of large, light A neurons in the sensory ganglia.

H-214
The Distribution of the neurons of ventral and dorsal cervical cutaneous nerves in DRGs of rats studied by fluorescent double labelling method.
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The cutaneous nerves of cervical region are divided into ventral and dorsal cutaneous nerves, deriving from ventral and dorsal ramii of three cervical nerves (C2-C4). The fluorescent dye DIO was rubbed at the sections of the transverse cervical and the anterior supraventricular nerves, and the DIO was at those of dorsal cutaneous nerves of C2-C5 on the same side. Serial transverse or sagittal sections of DRGs of C2-C5 were made at 20 μm in thickness, analyzed with a laser microscope and reconstructed. The neurons of ventral and dorsal cervical cutaneous nerves were labeled very clearly in every sections. In C5 DRG, a small number of neurons were labeled, coincidently with presence of a communication between ventral rami of C4 and C5. Although number of neurons of ventral and dorsal cervical nerves in DRGs showed individual differences, there were tendencies for sensory neurons of ventral cervical cutaneous nerves to distribute in the dorsal part of DRGs, and for the neurons of dorsal cervical cutaneous nerves to do in the ventral part. The results suggested that the distribution of neurons in DRGs of cervical cutaneous nerves show a possible somatotopic organization.

H-215
Changes in tyrosine hydroxylase immunoreactivity in the cat carotid body during and after arousal from hibernation
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Hypothermia during mammalian hibernation is interrupted periodically by arousals that return the animal to euthyermia. The elevation of the body temperature is accompanied by large changes in respiratory rate and heart rate. These drastic physiological changes may be regulated not only by the brainstem, but also by the chemoreceptor cells of the carotid body, which is an arterial chemosensory organ that regulates respiration. We measured changes in body temperature, respiration and heart rate during arousal from hibernation in horseshoe bats. Moreover we investigated the immunoreactivity of tyrosine hydroxylase (TH) in the carotid body during and after arousal from hibernation. During hibernation, the immunoreactivity for TH in type I cells was increased compared with non-hibernating animal. This increase was reduced markedly only 1 h after arousal from hibernation. These results indicate that TH in type I cells plays a significant role in the regulation mechanism of the chemoreceptor function which occur in response to drastic physiological changes during arousal from hibernation.