研究業績　英文表記

和文	
表題	ラットにおける異系神経移植、特に神経再生におけるシュワン細胞基底膜の役割に注目して
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英文	
Title	Allogeneic nerve grafts in the rat, with special reference to the role of Schwann cell basal laminae in nerve regeneration.
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Abstract	The role of basal laminae as conduits for regenerating axons in an allogeneic graft was examined by transplanting a 3 cm long segment of the sciatic nerve from the Brown Norway to the Fischer 344 strain rat. These strains are not histocompatible with each other. In order to compare the nerve regeneration in variously treated grafts, three different types of graft were employed: non-treated (NT), predenervated (PD), and predenervated plus freeze-treated (PDC) grafts. The cytology of nerve regeneration through these grafts was examined by electron microscopy at four, seven 14, 30 and 60 days after grafting. In the PDC graft, in which Schwann cells were dead on grafting, basal laminae were preserved in the form of tubes after Schwann cells and myelin sheaths had been removed at seven days after grafting. Regenerating axons accompanied by immature host Schwann cells grew out through such basal lamina tubes in the same fashion as observed in our previous studies. By day 14, axons extended as far as the middle of the graft. In the proximal part they were separated into individual fibres and even thinly myelinated by Schwann cells. On the other hand, in NT and PD grafts in which Schwann cells were alive on grafting, most Schwann cells and myelin sheaths appeared to undergo autolytic degeneration by day 14, while Schwann cell basal laminae were left almost intact in the form of tubes. A few regenerating axons were seen associated with Schwann cells in the proximal portion by day seven. It is probable that host Schwann cells moved into the graft after donor cells had been degraded. Schwann cell basal laminae tended to be damaged at the site of extensive lymphoid cell infiltration. By day 30, regenerating axons had arrived at the distal end of the graft in all three types of graft: in the PDC graft thick axons were fully myelinated, whereas in the PD graft they were only occasionally myelinated and in the NT graft most axons were still surrounded by common Schwann cells. By 60 days after grafting, regenerating axons were well myelinated in the host nerve as observed 1 cm distal to the apposition site in all the three types of graft. These findings show that Schwann cell basal laminae can serve as pathways (most efficiently in the PDC graft) for regenerating axons in a 3 cm long allograft in the rat.
keyword	allogeneic nerve graft, Schwann cell basal laminae, long segment

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