# A three-dimensional study on the development of the nerves,vessels and the muscles in the chick and mammalian embryos using a whole mount-immunohistochemical staining



# 1996 Fiscal Year Final Research Report Summary

## A THREE-DIMENSIONAL STUDY ON THE DEVELOPMENT OF THE NERVES,VESSELS AND THE MUSCLES IN THE CHICK AND MAMMALIAN EMBRYOS USING A WHOLE MOUNT-IMMUNOHISTOCHEMICAL STAINING

Research Project

### Project/Area Number

07670006

### Research Category

Grant-in-Aid for Scientific Research (C)

### Allocation Type

Single-year Grants

### Section

一般

### Research Field

General anatomy (including Histology/Embryology)

### Research Institution

KANAZAWA UNIVERSITY

### Principal Investigator

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### Project Period (FY)

**1995 – 1996**

### Keywords

DEVELOPMENT / PERIPMERAL NERVE / VESSELS / HEART / SUNCUS / CHICK / RAT / IMMUNOHISTOLOGY

## Research Abstract

1) Development of the vagal cardiac branches (VCB) in chick embryos By tracing the growth of the VCB at earlier stages of chick embryos, we found that the VCB are divided into 2 groups, those destined for the arterial site and those for venous site of the heart. Most important findings in this study that these VCB reveals a simple symmetrical, but not a complex, arrangement in contrast to the description in the leading anatomical as well as the embryological textbooks. Especially, the VCB destined for the venous site were found to follow the developing the superior vena cava and the pulmonary veins, reaching the sinuatrial node and the interatrial septum, the site of location of the atrioventricular node.
2) Unfortunately, the terminology of the VCB of humans and of vertebrates are greatly confused. Every author has applied the same terms to different branches arising from the vagal nerve. For clearing this confusion, we have performed macroscopical studies on the VCB in the chicken, rats, house shrews, and in human adults, and elucidated the morphological features of these branches in a more exact and detailed than ever manner. The results obtained in this study provide us with suff icient evidence to support a confident statement that the fundamental features of the VCB in humans are the same as those in vertebrates, including chicken.

# Research Products (14 results)

All | Other

All | Publications (14 results)

[Publications] 中谷壽男: "Superficial brachial arteries observd in bilateral arms." Acta Anatoamica Nipponica. 71. 308-312 (1996)

[Publications] 中谷壽男: "Retroesophageal right subclavian artery originating from the arotic arch distal and dorsal to the left subclavian artery." Annals of Anatomy. 178. 269-271 (1996)

[Publications] 中谷壽男: "Bilateral location of the axillary artery posterior to the medial cord of the brachial plexus." Journal of Anatomy. 189. 457-459 (1996)

[Publications] 安井金也: "Developmental pattern of axonal pathways in the house shrew maxillary nerve." Anatomy and Embryology. 194. 205-213 (1996)

[Publications] 水上茂樹: "An autopsy case of an extracoronary artery presenting evidence for the dualism of blood supply to the human heart." Acta Anatomica Nipponica. 71. 551-556 (1996)

[Publications] 田中重徳: "A variant branch of the internal larygeal nerve supplying filaments to the cricothyroid muscle : an autopsy case" Acta Anatomica Nipponica. (accepted).

[Publications] Nakatani S,Tanaka S,Mizukami S: "Superficial brachial arteries observed in bilateral arms" Acta Anatoamica Nipponica. 71. 308-312 (1996)

[Publications] Nakatani S,Ohtani O,Tanaka S: "Lymphatic stomata in the murine diaphragmatic peritoneum : the timing of their appearance and a map of their distribution" Anatomical Record. 244. 529-539 (1996)

[Publications] Nakatani S,Tanaka S,Mizukami S,Okamoto K, Shiraishi Y,Nakamura T: "Retroesophageal right subclavian artery originating from the arctic arch distal and dorsal to the left subclavian artery" Annals of Anatomy. 178. 269-271 (1996)

[Publications] Nakatani S,Tanaka S,Mizukami S,Shiraishi Y,Nakamura T: "The superficial ulnar artery originating from the axillary artery" Annals of Anatomy. 178. 277-279 (1996)

[Publications] Nakatani S,Tanaka S,Mizukami S: "Bilateral location of the axillary artery posterior to the medial cord of the brachial plexus" Journal of Anatomy. 189. 457-459 (1996)

[Publications] Yasui K,Arakaki R,Uemura M,Tanaka S: "Developmental pattern of axonal pathways in the house shrew maxillary nerve" Anatomy and Embryology. 194. 205-213 (1996)

[Publications] Mizukami S,Tanaka S,Nakatani T: "An autopsy case of an extracoronary artery presenting evidence for the dualism of blood supply to the human heart" Acta Anatomica Nipponica. 71. 551-556 (1996)

[Publications] Tanaka S,Nakatani T,Mizukami S,Lee H-Y,Chung I-H: "A variant branch of the internal laryngeal nerve supplying filaments to the cricothyroid muscle : an autopsy case" Acta Anatomica Nipponica. (accepted).

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