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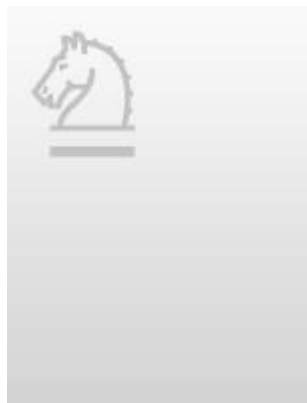
Development of Auditory Sensitivity in the Inferior Colliculus of the Tamar Wallaby *Macropus eugenii*

- [Guang Bin Liu](#),
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Abstract

The Australian tamar wallaby, a macropod marsupial, is now the subject of established investigations into the development of the visual and somatosensory systems (e.g., Waite et al., 1991, 1994; Mark and Marotte, 1992). Recently, we have commenced studies of the development of the auditory system. The particular advantage of the marsupial preparation is that much of its development occurs both slowly and *ex utero*, the young being carried and suckled in a pouch, so that access is available at very early stages of development. We have now established the timetable for the first appearance and the properties of the scalp-recorded, auditory brainstem response (ABR) in developing wallabies, in several cases monitoring the ABR in longitudinal studies (Cone-Wesson, Hill and Liu, in prep.). Following its first appearance as a simple biphasic wave, in a preparation at around 120 days of pouch life, the ABR progressively becomes more complex, with an increased number of distinct peaks, as the animal matures. A likely reason for the elaboration of the ABR with development is the progressive onset of function in auditory brainstem nuclei, which are candidates as generators of discrete evoked potentials that may sum in the form of the ABR. The present study is concerned with the development of function in the prominent auditory centre, the inferior colliculus (IC). In marsupials, this major midbrain structure receives afferent connections from the more-peripheral auditory nuclei (Aitkin, 1986). The development of the IC has been studied in several mammalian species, rat (Altman and Bayer, 1981), cat (Aitkin and Reynolds, 1975; Moore, 1980), bat (Miller et al., 1978) and rhesus monkey (Cooper and Rakic, 1981), however, little information is available on development of the IC in marsupials (Aitkin et al., 1995).

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DEVELOPMENT OF AUDITORY SENSITIVITY IN THE INFERIOR COLLICULUS OF THE TAMMAR WALLABY *Macropus eugenii*

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1. INTRODUCTION

The Australian tamar wallaby, a macropod marsupial, is now the subject of established investigations into the development of the visual and somatosensory systems (e.g., Waite et al., 1991, 1994; Mark and Marotte, 1992). Recently, we have commenced studies of the development of the auditory system. The particular advantage of the marsupial preparation is that much of its development occurs both slowly and *ex utero*, the young being carried and suckled in a pouch, so that access is available at very early stages of development. We have now established the timetable for the first appearance and the properties of the scalp-recorded, auditory brainstem response (ABR) in developing wallabies, in several cases monitoring the ABR in longitudinal studies (Cone-Wesson, Hill and Liu, in prep.). Following its first appearance as a simple biphasic wave, in a preparation at around 120 days of pouch life, the ABR progressively becomes more complex, with an increased number of distinct peaks, as the animal matures. A likely reason for the elaboration of the ABR with development is the progressive onset of function in auditory brainstem nuclei, which are candidates as generators of discrete evoked potentials that may sum in the form of the ABR. The present study is concerned with the development of function in the prominent auditory centre, the inferior colliculus (IC). In marsupials, this major midbrain structure receives afferent connections from the more-peripheral auditory nuclei (Aitkin, 1986). The development of the IC has been studied in several mammalian species, rat (Altman and Bayer, 1981), cat (Aitkin and Reynolds, 1975; Moore, 1980), bat (Miller et al., 1978) and rhesus monkey (Cooper and Rakic, 1981), however, little information is available on development of the IC in marsupials (Aitkin et al., 1995).

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