Survey and capture of albino-like house musk shrews (*Suncus murinus*) in Okinawa, Japan, and a preliminary report regarding inheritance of the albino-like mutation

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The house musk shrew (*Suncus murinus*) is one of 15 species in the genus *Suncus* (Abe 1985). This species is widely distributed from the Middle East and the Indian subcontinent to Southeast Asia, from tropical to subtropical regions, and its northernmost recorded habitat is in Nagasaki Prefecture, Japan (Corbet and Hill 1992). In Japan, the house musk shrew has been an established laboratory animal since 1973, and several laboratory strains currently exist (e.g., KAT, NAG, RYU, TESS; Oda 1991). This is the only widely used laboratory animal belonging to the Insectivora; suncus is utilized for a variety of purposes, including emesis studies (Ueno et al. 1987; Uchino et al. 2006).

The house musk shrew exhibits extreme morphological variations. For example, its body weight varies three- to fourfold among wild populations: male shrews in Bangladesh weigh more than 150 g, while males in Guam are less than 50 g (Tomita et al. 1984; Ishikawa et al. 1989). Variations also exist in the dentition (Hanamura et al. 1979; Jogahara et al. 2007), chromosome number (Minesawa 1985), and coat color (Iseki et al. 1984; Ishikawa et al. 1986, 1987, 1989). Moreover, mutations in coat color (cream and white) and eye color (red-eyed dilution) occur in wild populations (Oda and Shigehara 1978; Ohno et al. 1992, 1994).

The most prominent form of albinism in mice is a *tyrosinase* gene mutation that results in a white coat and red eyes (Beermann et al. 2004). However, mutations in other pigment genes result in diverse phenotypes in mice and humans (Tomita and Suzuki 2004; Hearing 2005). Thus, phenotypic observations cannot determine if the *tyrosinase* gene mutation is present. Moreover, individuals with a white coat and normal eye color occur in many species, including the house musk shrew (Oda and Shigehara 1978). Hence, an albino-like shrew is defined as one having a pure white coat and red eyes (Fig. 1a).

Three albino-like house musk shrews were captured on Okinawa Island, Japan. In this report, past capture records of albino-like house musk shrews in the Ryukyu Archipelago were reviewed and integrated present capture records to determine their distribution. Additionally, the captured albino-like house musk shrews were maintained in the laboratory, and bred with the RYU strain of suncus established from Okinawa Island. The RYU strain had been kept for over 4 years and over 60 litters have been obtained, although no record exists of coat color variation or albinism and red eyes. This is thus a report of preliminary findings on the inheritance of the albino-like gene.

Five albino-like house musk shrews from Okinawa and Tarama Islands have been recorded since 1968 (Table 1). Although the house musk shrew is a common

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