plaques and tau-positive neurofibrillary tangles without co-localization with positive signals for these antibodies [11]. However, the relation between PS2V-composed inclusions and the HBs, which are another important pathological indicator of AD, had not yet been demonstrated. To confirm this relationship, we carried out PS2V-immunostaining, followed by HE-counter staining, and it was demonstrated that PS2V-composed inclusions differed obviously from HBs (Figs. 1D,E). The hematoxylin-eosin (HE)-positive HBs were smaller and more elongate than the PS2V-composed inclusions (Table 1). Conversely, most of the PS2V-composed inclusions were larger and rounder in comparison with the HBs. Further, the HE-positive HBs were more numerous than the PS2V-composed inclusions in the hippocampal CA1 region of the SAD brain. These observations suggest that the PS2V-composed inclusions were novel pathological observations in the SAD brain tissue.

Using another approach with an anti-α-actin antibody that also is associated with HBs [7], immunoreactive-PS2V did not co-localize with immunoreactive HBs, or with HE-positive HBs (Figs. 2A,B). The HBs were smaller, more elongate and more numerous than PS2V-composed inclusions, even in experiments using an anti-α-actin antibody, as well as in those using the HE staining. Immunoreactive PS2V were not co-localized with Lewy bodies when an anti-α-synuclein antibody was used (data not shown). Further, PS2V-composed inclusions were not detected in the brains of Lewy body disease patients (data not shown). Also, there was a previous report that 13 (48.2%) of 27 cases of SAD had various alpha-synuclein-positive structures as well as Lewy bodies [1], however, PS2V-composed inclusions were detected in 100% of SAD patients [11]. These results suggest that the PS2V-composed inclusion bodies were different from other inclusions existing in the SAD brain, such as HBs and Lewy bodies.

We conclude that the PS2V-composed inclusion bodies are different from other inclusions and novel pathological indicators in the SAD brain. We name these PS2V-composed cytosolic inclusion bodies 'PS2V bodies.'

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