Deposition of aggregated amyloid-? (A?) peptide in brain is an early event and hallmark pathology of Alzheimer’s disease and cerebral A? angiopathy. Experimental evidence supports the concept that A? multimers can act as seeds and structurally corrupt other A? peptides by a self-propagating mechanism. Here we compare the induction of cerebral ?-amyloidosis by intraperitoneal applications of A?-containing brain extracts in three A?-precursor protein (APP) transgenic mouse lines that differ in levels of transgene expression in brain and periphery (APP23 mice, APP23 mice lacking murine APP, and R1.40 mice). Results revealed that beta-amyloidosis induction, which could be blocked with an anti-A? antibody, was dependent on the amount of inoculated brain extract and on the level of APP/A? expression in the brain but not in the periphery. The induced A? deposits in brain occurred in a characteristic pattern consistent with the entry of A? seeds at multiple brain locations. Intraperitoneally injected A? could be detected in blood monocytes and some peripheral tissues (liver, spleen) up to 30 d after the injection but escaped histological and biochemical detection thereafter. These results suggest that intraperitoneally inoculated A? seeds are transported from the periphery to the brain in which corruptive
templating of host A? occurs at multiple sites, most efficiently in regions with high availability of soluble A?.