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Electronic Supplementary Information

DiselenideBond-ContainingROS-ResponsiveRutheniumNanoplatformDelivers Nerve Growth Factor for Alzheimer's DiseaseManagementDelivers Nerve Growth Factor for Alzheimer's DiseaseManagementVepairing and Promoting Neuron RegenerationXiaoyu Yuan * a, Zhi Jia * a, Jin Li*b,Yanan Liua, Yuqin Huanga, Youcong Gonga,Xian Guoa, Xu Chena, Jieqiong Cena, Jie Liu*aaDepartment of Chemistry, College of Chemistry and Materials Science, JinanUniversity, Guangzhou 511436, China.bDepartment of Pain Management, the First Affiliated Hospital, Jinan University,Guangzhou 510630, China* Corresponding author, Jie Liu, Email: tliuliu@jnu.edu.cn;Jin Li, Email: 6587512@qq.com

* Xiaoyu Yuan and Zhi Jia contributed equally to this work and should be regarded as first co-authors.

Fax: +86-20-85220223; Tel: +86 020-37331547 (J.L.)



Fig. S1 Z-average diameter of different nanoparticles. (A) Ru NPs, (B) R@NGF-Se-Se-Ru and (C) R@NGF-Se-Se-Ru+ H_2O_2



Fig. S2 Quantify the amount of peptides loading R(A) and NGF(B).



Fig. S3 Biocompatibility assay. Photographs and quantitative results for membranebreaking activity of nanoparticles or treatment with H_2O_2 to mouse RBCs versus different concentrations.



Fig. S4 Stability of R@NGF-Se-Se-Ru in water, PBS (pH 7.4) buffer and cell culture medium



Fig. S5The effect of sRu NPs, R@NGF-Se-Se-Ru (20 μ g/mL) with or without NIR on DNA fragmentation induced by disrupted A β fibrils; scale bar=25 μ m.



Fig. S6 Representative images of H&E staining sections of the heart, liver, spleen, and kidneys collected from the mice at the end of the efficacy experiment.