Acta Pharmacologica Sinica

Contents

Monthly 2025 February; 46 (2)

Acta Pharmacologica Sinica

Contents

Monthly 2025 February; 46 (2)

Cover

Under transient middle cerebral artery occlusion (tMCAO) and oxygen-glucose deprivation/reoxygenation (OGD/Re) condition in vivo and in vitro, astrocyte-derived VEGFD activates the VEGF receptor 3 (VEGFR3) located on the membrane of astrocytes and microglia, respectively, disrupting astrocytic interleukin-3 (IL-3)/microglial IL-3 receptor α (IL-3Rα) crosstalk, leading to the activation of A1 astrocytes and M1 microglia and elevated neuroinflammatory cytokines. The disruption of this crosstalk between IL-3 and IL-3Rα induces lipid metabolic reprogramming of microglia evidenced by upregulating CPT1A expression, a rate-limiting enzyme for the mitochondrial β-oxidation, causing accumulated lipid droplets (LDs), activated microglia and neuroinflammation, reduced glycerophospholipids levels, microglial phagocytosis dysfunction and necrosis, as well as neuronal cell death. The therapeutic interventions by VEGFR antagonist axitinib or exogenous IL-3 can reestablish the IL-3/IL-3Rα crosstalk, reducing astrocytes and microglia activation, LDs accumulation and neuroinflammation, and restoring microglial phagocytotic function, ultimately contributing to brain recovery from tMCAO insult. See the article in pages 292–307.

EXECUTIVE EDITOR FOR THIS ISSUE XU, Jia (Shanghai)

ACTA PHARMACOLOGICA SINICA (Monthly)
2025 February; Volume 46 Number 2
(Founded in September, 1980)

Sponsored by
Chinese Pharmacological Society
Shanghai Institute of Materia Medica, Chinese Academy of Sciences
Supervised by
China Association for Science and Technology
Editor-in-chief
DING, Jian
Edited by
Editorial Board of Acta Pharmacologica Sinica
294 Tai-yuan Road, Shanghai 200031, China
Http://www.chinaphar.com
E-mail aps@simm.ac.cn
Phn 86-21-5492-2821, 5492-2822; Fax 86-21-5492-2823

Published jointly by
Editorial Office of Acta Pharmacologica Sinica
Springer Nature
Publication date
5th every month
Printed by
Shanghai Shengtong Times Printing Co Ltd
568 Guang-ye Road, Shanghai 201506, China

《中国药理学报(英文)》编辑部出版
国内统一连续出版物号
CN 31-1347/R

国内外公开发行
国内邮发代号 4-295
国内每期 200.00 元