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DRUG METABOLISM & DISPOSITION

50th Anniversary Celebration Collection

Special Section on Xenobiotic Receptors–Editorial

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Minireviews Editors

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The special section in the February 2023 issue of *Drug Metabolism and Disposition* features articles by Dr. Wen Xie, the recipient of the 2009 Richard Okita Early Career Award in Drug Metabolism and Disposition (the Okita Award), and his collaborators on xenobiotic receptors. This is one of a series of special sections in the 50th Anniversary Celebration Collection in 2023. Xenobiotic receptors refer mainly to the nuclear receptors pregnane X receptor (PXR) and constitutive androstane receptor (CAR). These receptors, also called *xenobiotic sensors*, are activated by xenobiotics and capable of regulating the transcription of genes encoding phase I and II drug-metabolizing enzymes and transporters. Major scientific topics discussed in this special section include (i) a historical overview of the discovery of PXR and CAR (Xie, 2022); (ii) phenobarbital in nuclear receptor activation (Men and Wang, 2022); (iii) microbial metabolites as ligands to xenobiotic receptors: the chemical mimicry as potential future drugs (Dvorak et al., 2022); (iv) regulation of nuclear receptors PXR and CAR by small molecules and signal crosstalk: roles in drug metabolism and beyond (Poudel et al., 2022); and (v) functions of xenobiotic receptors in metabolic diseases (Zhang et al., 2022).

Dr. Xie wrote an introductory review article reflecting on the history of the discovery of xenobiotic receptors PXR and CAR, as well as a summary of his contributions to the xenobiotic receptor field with one of the milestones being the recipient of the 2009 Richard Okita Award in Drug Metabolism and Disposition awarded by the Division for Drug Metabolism and Disposition of the American Society for Pharmacology and Experimental Therapeutics (Fig. 1). Dr. Xie obtained his MD degree from Peking University Health Science Center in 1991, and his PhD degree from the University of Alabama at Birmingham in 1997. He completed a postdoctoral fellowship at the Salk Institute before joining the University of Pittsburgh in 2002. Dr. Xie has held the Joseph Koslow Endowed Professorship since 2012. He has been the chair of the Department of Pharmaceutical Sciences since 2017.

The Xie article also introduces the leading authors of four other review articles in this section. They are Dr. Hongbing Wang from the University of Maryland, Dr. Sridhar Mani from Albert Einstein College of Medicine, Dr. Taosheng Chen from St. Jude Children's Research Hospital, and Dr. Jinhan He from Sichuan University. Drs. Hongbing Wang, Sridhar Mani, and Taosheng Chen are senior colleagues in the field of xenobiotic receptors. Dr. Xie made their acquaintance in the early days of xenobiotic receptor studies more than 20 years ago when all of them were junior faculty. Dr. Jinhan was a postdoctoral fellow and later a junior research faculty in Dr. Xie's laboratory before returning to China to lead his independent laboratory in China.

The five review articles cover a wide range of topics related to xenobiotic receptors, including natural and synthetic xenobiotic ligands and their sensing by xenobiotic receptors, transcriptional regulation mediated by xenobiotic receptors, and

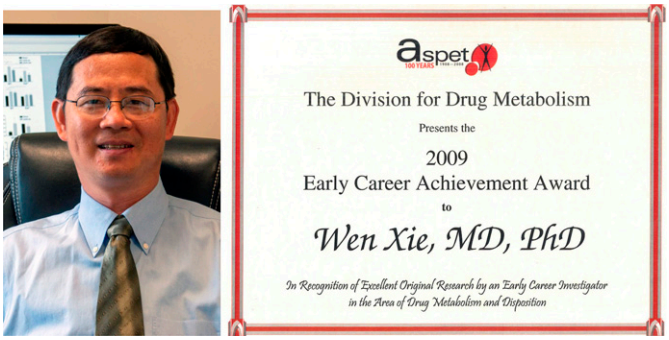

Fig. 1. Dr. Wen Xie was the recipient of the Richard Okita Early Career Award in Drug Metabolism and Disposition, awarded by the Division for Drug Metabolism and Disposition of the American Society for Pharmacology and Experimental Therapeutics in 2009. Photos are reproduced with permission from Dr. Wen Xie.

ABBREVIATIONS: CAR, constitutive androstane receptor; PXR, pregnane X receptor.

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the crosstalk between PXR and CAR, the endobiotic functions of xenobiotic receptors and their implications in disease progression, and xenobiotic receptors as therapeutic targets to manage drug–drug interactions, improve drug efficacy, and treat human diseases.

Xiao-bo Zhong and Yurong Lai
Minireviews Editors

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