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Dacomitinib antagonizes multidrug resistance (MDR) in cancer cells by inhibiting the efflux activity of ABCB1 and ABCG2 transporters

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Abbreviations: MDR, multidrug resistance; ABC, ATP-binding cassette; EGFR, epidermal growth factor receptor; TK, tyrosine kinase; TKI, tyrosine kinase inhibitor

Abstract

The development of multidrug resistance (MDR) to chemotherapy remains a major challenge in the treatment of cancer. Numerous mechanisms have been recognized that cause MDR, but one of the most important mechanisms is overexpression of adenosine triphosphate (ATP)-binding cassette (ABC) transporters, through which the efflux of various anticancer drugs against their concentration gradients is powered by ATP. In recent years, small molecular tyrosine kinase inhibitors (TKIs) have been developed for treatment in various human cancers overexpressing epidermal growth factor receptor (EGFR). At the same time, some TKIs have been shown to be capable of inhibiting ABC transporter-mediated MDR. Dacomitinib

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