Letter to the editor: “Doxorubicin and ErbB2 overexpression: another piece in the mitochondrial jigsaw”

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TO THE EDITOR We read with great interest the recent article, the mitochondrial jigsaw” Letter to the editor: “Doxorubicin and ErbB2 overexpression: another piece in modulation of the cell redox potential induced by ErbB2 overexpression. Ichikawa et al. (8) have shown that DOX-induced cardiotoxicity originates from the specific mitochondrial accumulation of iron, which leads to increased ROS production in this organelle, but also that DOX represses the expression of ATP-binding cassette subfamily B transporter-8 (ABCB8), a protein that exports iron out of the mitochondria (8). However, such findings have not been described with TRZ, although a mitochondrial ErbB2 (mtErbB2) has been recently described as a key regulator of cell metabolism (3). Interestingly, breast cancer cells with higher levels of mtErbB2 were found more resistant to TRZ; the translocation of membrane ErbB2 into mitochondria is now considered as novel mechanism for TRZ resistance.

These findings also raise important questions concerning the interactions between TRZ and other chemotherapeutic agents on ABCB transporters (1), which are involved in iron distribution into the cell (6, 9). Consequently, it would be of interest to elucidate whether ErbB2 could be directly involved in mitochondrial iron regulation, thus being the missing link between increased ROS production and neuregulin overexpression following DOX administration (11).

DISCLOSURES
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