

Letter to the editor:

ROLE OF WDR5 IN BREAST CANCER PROGNOSIS

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Dear Editor,

Recently, Punzi and colleagues published a study about the role of WDR5 in breast cancer metastasis (Punzi et al., 2019). WDR5 is involved in epigenetic regulation complexes and has been reported to influence the expression of numerous genes, including N-cadherin, Snail1 and vimentin (Aho et al., 2019; Ford and Dingwall, 2015; Wu et al., 2011; Chen et al., 2017; Tan et al., 2017). Several studies suggested WDR5 as a therapeutic target (Ye et al., 2019a, b; Macdonald et al., 2019; Aho et al., 2019; Zhang et al., 2018; Lu et al., 2018). In their present work, Punzi and colleagues report that downregulation of WDR5 by shRNA in breast cancer cells antagonizes the epithelial-to-mesenchymal transition through re-differentiation and reduces metastasis in a mouse model (Punzi et al., 2019). Moreover, an association of high WDR5 expression with shorter metastasis-free survival was observed in a cohort of breast cancer patients (Punzi et al., 2019). A further important finding of this study is that WDR5 activates TGF β in breast cancer and that targeting the WDR5-TGF β axis by a small molecular inhibitor reduces the migratory potential of breast cancer cells. Metastasis of breast cancer is a complex process (Loi et al., 2019; von Minckwitz et al., 2019; Gogiashvili, 2018; Stoeber, 2017). Besides epithelial-to-mesenchymal transition, genes involved in proliferation (Schmidt et al., 2018), immune cell infiltration (Schmidt et al., 2012, 2018; Heimes et al., 2017a, b; Godoy et al., 2014), oxidative stress response (Cadenas et al., 2010, 2014, 2019; Hellwig et al., 2016) and inflammatory factors (Mattsson et al., 2015; Sicking et al., 2014) are of relevance; also key enzymes of phosphocholine metabolism have been shown to control breast and ovarian cancer metastasis (Marchan et al., 2017; Stewart et al., 2012). It will be interesting to learn in the next years, whether WDR5 targeting compounds can be identified that have a perspective to be tested in clinical studies.

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