

## Letter to the editor:

### ANTICANCER ACTIVITY OF LUTEOLIN GLYCOSIDES

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#### **Dear Editor,**

Recently, Lee and colleagues published a study on cytostatic effects of luteolin glycosides in MDA-MB-231 breast cancer cells (Lee et al., 2019). Luteolin and its derivate have been shown to inhibit migration of several cell lines (Kim et al., 2012; 2018a, b; Park et al., 2013). In the present study, the authors focused on MDA-MB-231 cells, a HER2-negative, as well as estrogen and progesterone receptor negative cell line, because triple-negative cancer cells represent a challenge in breast cancer therapy (Callmann et al., 2020). The authors demonstrate that luteolin inhibited migration and invasion of MDA-MB-231 cells stimulated with the tumor promoter 12-O-tetradecanoylphorbol-3-acetate already at a non-cytotoxic concentration of 5  $\mu$ M (Lee et al., 2019). At cytotoxic concentrations luteoline caused Fas-mediated apoptosis (Lee et al., 2019).

Improved treatment options of triple negative breast cancer are urgently needed (Wang et al., 2020; Moss et al., 2020). Factors responsible for prognosis and metastasis of breast cancer include the cellular and humoral immune system (Schmidt et al., 2012, 2018; Heimes et al., 2017a, b), cholin metabolism associated genes (Marchan et al., 2017; Lesjak et al., 2014; Stewart et al., 2012), antioxidative factors (Cadenas et al., 2014, 2019; Hellwig et al., 2016), actin associated proteins (Stock et al., 2015; Rommerswinkel et al., 2018), and many more. It will be interesting to learn in future if luteolin glycosides, which show promising effects in breast cancer cell lines *in vitro* will also be efficient in mouse tumor models.

#### **Conflict of interest**

The authors declare no conflict of interest.

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