

# CONFORMATIONALLY-FLEXIBLE BENZAMIDE ANALOGS AS SIGMA-2 SELECTIVE LIGANDS

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The sigma-2 ( $\sigma_2$ ) receptor is an important target for the development of molecular probes in oncology because of its 10-fold higher density in proliferating tumor cells than in quiescent tumor cells, and the observation that  $\sigma_2$  receptor agonists are able to kill tumor cells via apoptotic and non-apoptotic mechanisms. Novel benzamide compounds are disclosed that target  $\sigma_2$  receptors. Their radiolabeled counterparts can be used for imaging the proliferative status of solid tumors, such as breast cancer. These compounds, when labeled with  $^{18}\text{F}$ , can be used as radiotracers for imaging of tumors by positron emission tomography (PET). And when labeled with  $^{123}\text{I}$ , they can be used for imaging of tumors by single photon emission computed tomography (SPECT).