Correction to: Agonists activate different A_{2B} adenosine receptor signaling pathways in MDA-MB-231 breast cancer cells with distinct potencies

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The original published online version contains mistakes in the Title and in the Abstract section. The correct version is given above for the title and below for the Abstract:

Abstract

It is well established that some receptor types including G protein-coupled receptors may transduce effects through more than one signaling pathway. This holds also true for A_{2B} adenosine receptors which were shown to trigger an increase in intracellular Ca²⁺ levels in addition to the canonical stimulation of adenylyl cyclase. We have recently shown that activation of A_{2B} receptors in the breast cancer cell line MDA-MB-231 elicits a reduction in ERK1/2 phosphorylation, an effect that might be exploited in treatment of cancer cell growth and proliferation. In this study, we investigate whether structurally diverse agonists show functional selectivity for any of the signaling pathways leading to an increase of intracellular cAMP or Ca²⁺, or the reduction of ERK1/2 phosphorylation. As

agonists, adenosine derivatives were used bearing different substitutions in 2- and 6-position and, in addition, a ligand with a non-nucleoside structure was tested. It was found that all the tested ligands showed similar pharmacological profiles for the three responses investigated in MDA-MB-231 cells. However, the reduction of ERK1/2 phosphorylation occurred with 40–500-fold higher potency compared to stimulation of adenylyl cyclase or increasing intracellular Ca²⁺ levels. Based on these observations, it seems possible to utilize activation of A_{2B} adenosine receptors expressed in certain cancers to limit cell growth and proliferation due to reduction of MAPK activity without activation of other signaling pathways potentially responsible for side effects.

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